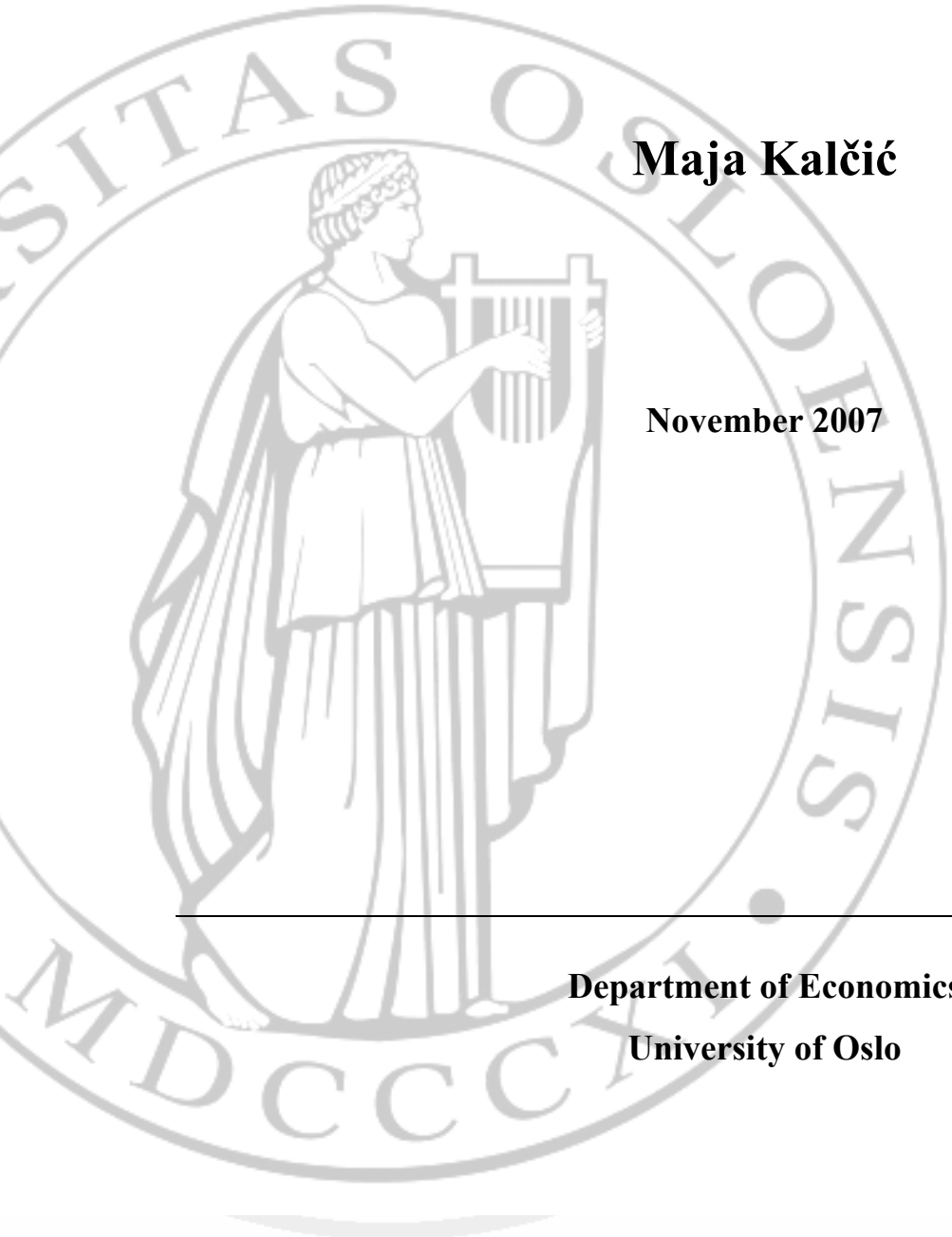
Master thesis for the Master of Economic Theory and Econometrics degree

Income Inequality

Empirical Analysis of Individual Incomes in Norway; 1996-2004



Maja Kalčić

November 2007

Department of Economics

University of Oslo

Preface

I would like to thank my supervisor Hilde Bojer for stepping in and leading me through. For all the help, guidelines and constructive discussions - “hvala”.
Furthermore, I would like to thank Helene Roshauw from NSD and Jon Epland from Statistics Norway for prompt responses and answers to numerous questions regarding the data.
Finally, I would like to thank my family and friends for their patience and support, my employer for his flexibility and understanding, and Ørjan for not giving up.

Maja Kalcic
Oslo, November 2007

Contents

1. INTRODUCTION **3**

2. ECONOMIC INEQUALITY **5**

2.1. WHAT SHOULD BE EQUAL? 7

2.2. DRIVING FACTORS OF ECONOMIC INEQUALITY 10

2.3. EFFECTS OF ECONOMIC INEQUALITY 13

3. INCOME INEQUALITY **15**

3.1. MEASURES OF INCOME INEQUALITY 17

3.1.1. Percentile distribution 19

3.1.2. The Lorenz curve and the Gini coefficient 20

3.1.3. The General Entropy class of measures and the coefficient of variation 22

3.1.4. Decomposition by income source 23

3.2. TRENDS IN INCOME INEQUALITY 25

3.2.1. OECD countries 26

3.2.2. Norway 28

4. ANALYSIS OF INCOME DISTRIBUTION IN NORWAY; 1996-2004 ..... **29**

4.1. TECHNICAL SUMMARY 30

4.1.1. Data 30

4.1.2. Definitions 31

4.2. DISTRIBUTION OF INCOME 32

4.3. DISTRIBUTION OF INCOME COMPONENTS 37

4.4. CONCLUSION 42

5. REFERENCE LIST **43**

6. LIST OF FIGURES AND TABLES **47**

APPENDIX A: RESULTS **48**

APPENDIX B: COMPLEMENTARY DATA SOURCES **59**

1. INTRODUCTION

Economic inequality in general and income inequality in particular have been showing increasing trends in the last two decades. Cornia and Kiiski (2001) showed that causes of the recent rise are strongly linked to neoliberal policy reforms, often referred to as the Washington consensus, that have been increasingly adopted in industrialized countries. Trade liberalization, technology issues and redistributive inefficiency are put forward as the major new driving factors. Rising income inequality is characterized by an increase in the capital's share of total income and increased earnings inequality. Moreover, Jäntti and Sanström (2005) argue that there is a disproportionate increase in the income share of the richest. The same findings are reported in OECD economic studies by Föster and Person (2002) and Förster and d'Ercole (2005). They show that there is a continuous increase in the market income inequality despite different approaches to redistribution, which highlights the efficiency/equity trade-off problem. However, empirical investigations of the relationship between inequality and economic growth have given disparate results and, so far, no consensus has emerged.

The primary objective of this thesis is to analyse recent changes in income inequality in Norway. Is income inequality rising? Where in the distribution changes occur? Are the rich getting richer? Which income components contribute to these changes? Has there been any change in the importance of different income sources?

The analysis is based on individual, rather than household equivalent incomes. This choice of income unite is crucial for measuring the extent of income differences and, thereby, overall inequality. In addition, applying selected inequality measures (decile distribution, Gini coefficient and squared coefficient of variation) is supposed to shed more light on different parts of the income distribution.

The evidence is clear. Since 1996, inequality of income in Norway has been rising. The increase can be attributed to increased share of income accruing to the rich. For instance, the share of top 5% individuals in total after-tax income has increased from 16% to 19,5% in 2004 and it is still rising. Inequality of after-tax income has, in general, been showing the same pattern as the inequality of "market income". However, redistributive effects of targeted transfers and taxes were diminishing in the observed period. In 1996, inequality of market income, measured by the Gini coefficient, was reduced by 0,067 (from 0,405 to 0,338), while in 2004, this reduction was 0,056 (from 0,408 to 0,352). Decreasing inequality of *total income*

without capital and inequality measured by the squared coefficient of variation (SCV), put emphasis on the capital income. Capital's share of the total income increased moderately, from 6,24% to 8,53%, but capital incomes have been highly concentrated at the top of the distribution (share of total capital income accruing to the top 1% has increased from 55,77% to 73,59%). This is evident from the relative contribution of capital incomes to overall inequality. Even though the Gini coefficient and the SCV show different levels of capital's contribution, 21,2% and 89,31% respectively, they both show an increasing trend. Market income inequality and inefficient taxation of capital incomes (dual taxes) are confirmed to be the main causes of these recent changes.

The rest of the paper is organized as follows. Chapter 2 explains the notion of economic inequality and reviews different principles of distributional justice. Driving factors and effects of economic inequality are described in separate sections.

Chapter 3 focuses on income inequality and starts with conceptual problems present in analyses of income distribution. Income inequality measures used in the empirical analysis are described in more details before the last section, which gives an insight into global trends in income inequality, with emphasis on the recent developments in OECD countries and Norway.

Chapter 4 is the empirical analysis of the individual income distribution in Norway from 1996 to 2004, based on the Income Distribution Survey data.[1] It contains two main sections. In chapter 4.2., the analysis deals with inequality of total and after-tax income. Different concepts of income are used in order to isolate the effect of underlying variations due to age or occupation. Decomposition of inequality by the income sources is the topic investigated in chapter 4.3. It explores changes in the importance of different income sources and their contribution to overall inequality. All computations in the paper are done with SPSS 14.0 and DAD 4.4 [2]

[1] All data, collected and prepared by the Statistics Norway (SSB), were supplied to me by the Norwegian Social Science Data Services (NSD) in the anonymous form. Neither SSB nor NSD are in any way responsible for this analysis or its results.

[2] Duclos J.-Y., Araar, A. and C. Fortin, "DAD: A software for Distributive Analysis / Analyse Distributive", MIMAP programme, International Development Research Centre, Government of Canada and CRÉFA Université Laval

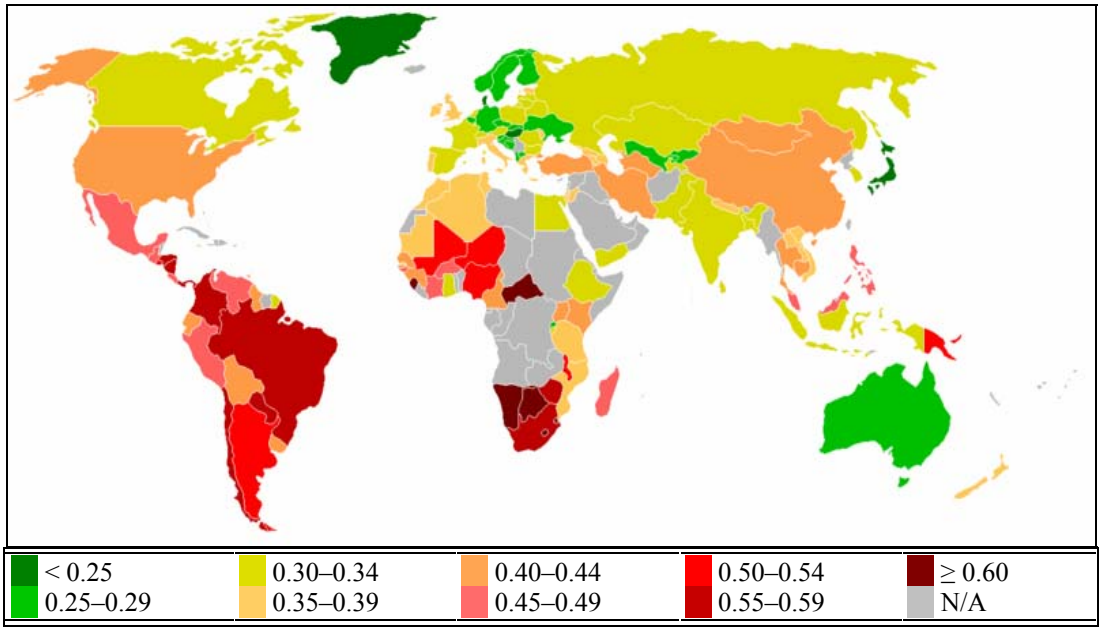
2. ECONOMIC INEQUALITY

> ***Plato*** *(427-347 B.C.): "The form of law which I propose would be as follows: In a state which is desirous of being saved from the greatest of all plagues -- not faction, but rather distraction -- there should exist among the citizens neither extreme poverty nor, again, excessive wealth, for both are productive of great evil . . . Now the legislator should determine what is to be the limit of poverty or of wealth."*

Economic inequality refers to disparities in the distribution of access to economic goods and can be assessed on three levels: national - among people within the country, international - between countries, and global - between all individuals in the world. National measures are usually the most reliable because the degree of economic inequality within country depends on the country's social and economic structure.

International comparisons are frequently used to document variations between countries and explain global or regional changes. Figure 1 and table B-1 (appendix B) show measures of national inequality for different countries. However, despite the attractiveness of such presentations, measures are often not directly comparable across countries due to different methods and type of data collected in the underlying surveys.[3]

Figure 1: Differences in income equality measured by the national Gini coefficient[4] (mid-1995)



Source: http://en.wikipedia.org/wiki/List_of_countries_by_income_equality [5]

[3] Difficulties related to cross-time and cross-country comparisons are analysed in Atkinson *et al*. (2002)
[4] The Gini coefficient is a number between 0 and 1, where 0 corresponds to perfect equality and 1 corresponds to perfect inequality. Detailed description of inequality measures is given in chapter 3.1.
[5] Data are obtained from the UN Human Development Report 2004

The distribution of *economic goods* refers to distribution of income and wealth. The difference between the two is, simply put, that income represents a flow of resources over a period, while wealth is a stock of assets at a point in time. However, annual decisions about the flow of resources – income from different sources, tax, consumption, capital transfers and savings – affect the stock of assets (wealth), or at least its change from the last year (Atkinson, 1983).[6] This link can also explain why higher income *ceteris paribus* gives more wealth and more wealth can give higher (capital) income.

[6] The stock of assets is affected both by the annual flow of resources and the stock from the previous period.

2.1. WHAT SHOULD BE EQUAL?

Inequality raises important questions about social justice and fairness in all societies. Different principles of justice lead to different views about inequality and there is an ongoing debate as to what equality should mean. There are multiple variables for judging equality and each variable is central in some theory. However, the acceptance of equality in terms of one variable can imply the rejection of equality in terms of another variable because of 'human diversity' (Sen, 1992).

The distribution of economic goods can be compared to the "cake division problem"[7]. Under the assumption that the cake's size is fixed, a particular sized slice of the cake may mean different levels of well-being for different people. Different innate abilities, needs, tastes and choices are some of the important factors that can be taken into account when dividing a cake. This problem of heterogeneity among individuals and the choice of relevant comparable characteristics are a starting point for the theory of social justice, discussed in the next chapter.

But the size of the cake is variable and its division may have effect upon the size. The equity/efficiency trade-off problem is particularly important for issues like redistribution and relation between individual contributions and economic productivity. A redistribution policy may have costs in terms of reduced efficiency, but it may also be affected by efficiency considerations. An example is a policy that is considered to be a Pareto improvement if it makes some rich people richer without making anyone poorer, even though it increases the total amount of inequality. The other issue regards individuals and their differences in endowed productive abilities and effort. Since the effort is directly under the control of the individual, inequality provides incentives as long as the cause is mainly due to differences in behaviour.

Ronald Dworkin advocates equality of resources which measure individual endowment, i.e. land and real capital. Inequality in distribution is accepted as just only if it is due to free choice (ambition sensitive), uncertainty and differences in innate abilities.

[7] It refers to the allocation of a fixed resource among various individuals. (Atkinson and Bourgignon, 2000)

In his ‘Theory of Justice’, John Rawls introduces the concept of (social) primary goods - such as liberty, opportunity, income, wealth and bases of self-respect - that should be distributed equally. However, social and economic inequalities are allowed if ‘the difference principle’ is satisfied, that is if inequality is to the benefit of the least advantaged members of society (the so-called ‘maximin’ principle).

Equality of capabilities is proposed by Martha Nussbaum and Amartya Sen. Equal distribution is based on equal ability to achieve relevant functionings as a part of living. Functionings are beings and doings that constitute the living and determine ones well-being, while capabilities are the real opportunities to have well-being or to achieve valuable functionings (Sen, 1992). It is important to distinguish capability (freedom actually enjoyed) from (i) primary goods and other resources (freedom to achieve) and (ii) achievements (combinations of functionings actually enjoyed). Full-time employment is a functioning and it should be a free choice of each person to achieve it or not. Still, there is a difference between voluntarily choosing to work part-time and being deprived of that choice.

Welfarist theories, represented by utilitarianism and welfare economics, are concerned with aggregate objectives. The social welfare is evaluated by outcomes of the individual welfares represented in a social welfare function, $W = W\left(U_1, U_2, ..., U_n\right)$. Optimal distribution of welfare, usually measured by variables that are correlated with welfare, e.g. income, is the distribution that maximizes social, or total, welfare. Since social welfare functions are normally assumed to fulfil the Pareto principle, improvements are possible either through an increased welfare of one person while that of the others is unchanged or a decreased inequality of individual welfares (in inequality averse social welfare functions).

Marxism favours a society where distribution is based on an individual's needs rather than his or her ability to produce, social class, inheritance, or other such factors. In that case, low or non-existent inequality in income distribution assumes that everyone had the same "needs".

Libertarians believe in equality under the law regardless of whether it leads to unequal distribution of economic goods. Inequality, being a consequence of a free market processes, is accepted and any pursuit of economic equality by government actions is considered as abuse of power, directly affecting political freedom.

There is also a broad disagreement between equality in terms of outcome and equality in terms of opportunity. The equality of outcome approach seeks to reduce or eliminate differences in outcome that can be measured by income, wealth, capabilities or utilities. This reduction can be obtained by progressive taxation or through welfare state. Equal opportunity approach has the intention to provide a social environment in which people are not excluded from the activities of society on the basis of immutable characteristics, such as race, age, gender and disability. Greater equality of opportunity - equal consideration for employment, housing or education and equal access to public goods and services - means better use of basic human resources.[8]

In practice, opportunities and outcomes are difficult to separate. Opportunities are often valued by measuring outcomes: equal opportunity is said to exist when people with similar abilities reach similar results (equality of outcome) after doing a similar amount of work. Moreover, opportunities that can be passed between generations through inheritance imply that equality of opportunity for children cannot be achieved without greater equality of outcome for parents. According to the UN Human Development Report 2006, parental income explains about 20% of the earnings of offspring in countries with low inequality (e.g. Denmark and Norway) and more then 50% in US and UK.

[8] There would be greater efficiency and equity. (Stiglitz, 2003)

2.2. DRIVING FACTORS OF ECONOMIC INEQUALITY

The causes of inequality, which are often complex and inter-related, can be explained by both individual characteristics and the underlying economic and social structure.

The level of income inequality is determined by unequal distribution of income sources: earnings, capital and transfers. Inequality of earnings, which are the most important source of income, is usually explained by the differences between people (their abilities and opportunities), differences between jobs, and the structure of the labour market (Atkinson, 1983). Participation and position in the labour market may significantly vary for different age, gender, racial and ethnic groups. This is due to both voluntary and, more often, involuntary choice of *working time* and *wage rate*.[9] Earnings of women are still lower than those of men and gender inequality can be explained by both working time women choose, e.g. less working hours or part-time jobs, and by lower wage rates in "typically-female" professions.[10] Nevertheless, Nilsen (2007) showed that this income gap increases with the income level, even after controlling for characteristics such as education, experience, occupation, sector and working time. Earnings inequality is also affected by human capital, i.e. higher education, training and more experience, which usually provide better job and a higher wage rate. Moreover, labour market structure can influence wage formation, the structure of earnings and the level of (un)employment through its institutions and policies, for instance trade unions, collective bargaining and existence of wage regulation.

Non-labour incomes, capital and transfers, represent a much smaller share of the total income. Capital income is in that sense less relevant than earnings, but its usual concentration at the top of the income distribution means that it can add more to overall differences. Transfers, on the other hand, are often considered as part of the redistribution system. However, the majority of transfers is based on pre-paid contributions (for case of unemployment, invalidity or retirement) and should not be considered as different from capital income (Atkinson and Bourgignon, 2000).

Income inequality within many countries has increased in the last two decades. According to Cornia and Court (2001), this trend is characterized both by increased earnings inequality and increased share of capital income.

[9] As pointed by Brandolini *et al*. (2002), part-time workers, young workers, women, workers in agriculture and less educated have larger chances of getting low-paid jobs.
[10] See Bojer (2003, 2005)

As showed by Cornia and Kiiski (2001), countries well endowed with natural resources and with concentrated land ownership are often characterized by high income concentration and high earnings inequality. Natural resource-rich countries are characterized by capital-intensive sectors of production, which reduces demand for unskilled workers and increases wage differential, and by concentrated ownership in these sectors, which ensures high capital income only to the elite. Land concentration, on the other hand, can explain income inequality in agriculture-dominated economies, where land rent absorbs a large share of total agricultural income and depresses the rural wages and, indirectly, the minimum wage in the urban sector.

Urban-rural inequalities that emerged in the post-war period through "urban bias" of exchange rate and pricing policies, urban-centred allocation of public expenditure and investment, and the urban/rural differences in access to education, can significantly contribute to income polarization and total inequality. Rising income inequality can be also explained by the unequal access to education, which increases earnings inequality. Atkinson (1983) showed that imperfections of capital markets and family background play an important role in determining access to education.

Technological change can explain both the increased wage dispersion and decreased share of labour in total income. New technologies generate a higher demand for skills, the so-called skill bias, and increase the wage differentials between skilled and unskilled workers. They also help to replace unskilled labour with skilled labour and physical capital. This is mostly evident in the service sector where progress in telecommunication and informational technologies has turned formerly non-tradeable services, like processing and accounting, into international tradeables (Cornia, 2003). The degree of effect that technological change has on inequality is closely related to investment in human capital.

The effects of trade liberalization are usually seen as a decrease in the relative price of goods which are relatively unskilled-intensive (Atkinson and Bourgignon, 2000). Competition from countries with unskilled-intensive sectors forces industrialized countries to utilize their comparative advantages and expand their output in the skilled-intensive sectors. This increases demand for skilled labour, and hence also increases the skilled/unskilled wage differentials. Gourdon *et al.* (2006) showed that effects of trade liberalization on inequality are correlated with relative factor endowments, e.g. positive correlation in countries well-endowed in highly skilled labour and capital. In addition, liberalization of financial markets has led to the free movement of financial capital and substantial increase in the real interest rates. This has increased capital's share in the total income.

Changes in the labour market through liberalization policies promoting wage flexibility and reduced regulation were expected to generate fast employment growth and some increase in wage dispersion. However, Burniaux (2006) shows that labour market institution/policies, like bargaining power of trade unions, adequate minimum wages and social protection systems, helped reducing inequality in some OECD countries. According to Atkinson (2005), labour market institutions can explain why increased demand for skills resulted in increased income inequality in the US, while the European countries experienced increased unemployment. Moreover, increased earnings inequality due to a surge of the highest wages, is possibly related to the expansion of the FIIRE sector[11], individual bargaining and changes in remuneration norms (*ibid.*).

Since the 1980's, redistribution policies have changed in most of the developed countries. Deregulation and tax reforms reflect increased emphasis on economic incentives which can be interpreted as the outcome of an efficiency/equality trade-off. Analyses by Förster and Pearson (2002) and Förster and d'Ercole (2005) for OECD countries show that increased inequality of disposable incomes points toward lower progressivity of taxes. Furthermore, they claim that the level and composition of public pro-poor expenditure have become less redistributive.

To summarize, traditional causes that were responsible for high income concentration in the 1950s through 1970s, such as concentrated ownership of land and natural resources, increasing urban/regional bias and inequality in education, explains a large part of the variation in inequality between countries, but the evidence of rising inequality in the past two decades revealed new causes; shift towards skill-intensive technologies and adoption of policies towards domestic deregulation and external liberalization.

Trends in wealth distribution have, in general, been similar to that of income. Based on changes in the income distribution - increasing incomes of the wealthy (relative to others) and increase in capital's share of total income (the main income source for the wealthiest) - causes of increased wealth inequality can, at least partially, be explained by changes in income inequality.[12] Rising share prices, the impact of social programs and the increasing use of tax avoidance measures are some of alternative causes proposed by Davies and Shorrocks (2000).

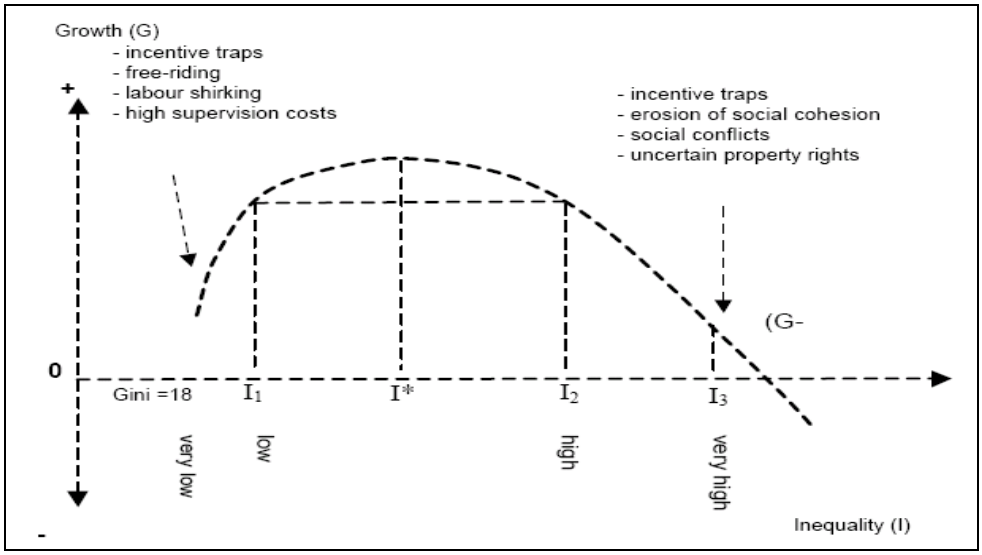
[11] FIIRE sector includes finance, insurance, internet and real estate.
[12] Some stylized facts about wealth distribution can be found in Davies and Shorrocks (2000) and Keister (2005)

2.3. EFFECTS OF ECONOMIC INEQUALITY

The main practical argument in favour of reducing economic inequality is the idea that economic inequality weakens society, hinders social and economic development, and can affect social and political stability.

The economic efficiency / social equity trade-off has been frequently analysed through relationship between inequality and growth. Traditional view based on the Kuznets-curve argued that levels of economic inequality are the result of stages of development. This theory, which showed an inverse U shape relation between inequality and income per capita, has not been able to explain the recent trends of increased inequality. According to Cornia and Court (2001), the shape of the inequality-growth relationship varies across countries depending upon their resource endowment, levels of absolute poverty and available stock of social programs, as well as on the distribution of physical and human capital. They claim that the Gini coefficient should be at the lower end of the efficient inequality range which is between 0.25 (Northern European countries) and 0.40 (USA, China) in order to obtain a high growth rate. Figure 2 indicates that both very high egalitarianism and very high inequality cause slow growth.

Figure 2: Inequality and growth curve



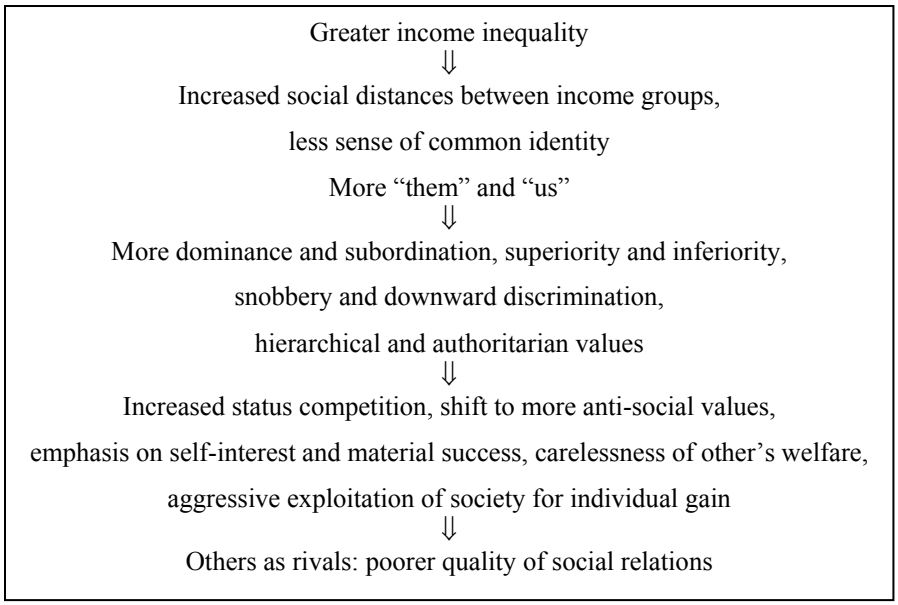
Source: Cornia and Court (2001)

Empirical investigations of the relationship between inequality and economic growth have given disparate results and, as reviewed by Asplund (2004), no consensus has emerged.

Moreover, recent research by Pagano (2004) shows that the sign of correlation between inequality and growth will be opposite for rich and poor countries.

As claimed by Wilkinson (2005) in figure 3, economic inequality influences the quality of social relations. There is a negative correlation between inequality and social cohesion. In more equal societies, people are much more likely to trust each other and measures of social capital[13] suggest greater community involvement. Lower inequality leads to lower crime rate and, in general, less tendencies for violence.

Figure 3: How greater inequality leads to poorer social relations



Source: Wilkinson (2005)

Population health is also affected. Mortality is strongly associated with higher income inequality within levels and not per capita income (Kverndokk, 2006). The Whitehall Study (2004) has shown that chronic diseases (stress, heart disease, ulcers, certain types of cancer, etc) are more common for the lower socioeconomic status. This phenomenon is often called the "SES Gradient". Lower degree of social cohesion and degraded social relations lead to greater levels of stress both for the poor and for the rich. However, it is the psychosocial risk factors, such as low social status, weak social affiliations and stress in early life, that influence their health (Wilkinson, 2005).

[13] The social capital of a society concerns the institutions, relationships, attitudes and values that govern interactions among people and contribute to economic and social development. It includes the shared values and rules for social conduct expressed in personal relationships, trust and a common sense of "civic" responsibility, which make a society more than just a collection of individuals. (World Bank)

3. INCOME INEQUALITY

> ***Paul Samuelson:*** *"If we made an income pyramid out of a child's blocks, with each layer portraying $1,000 of income, the peak would be far higher than the Eiffel Tower, but almost all of us would be within a yard of the ground."*

'Income' can be defined in many ways. In general, we can distinguish between factor income, as defined by the production theory, and personal income. Factor incomes refer to returns to different factors of production, i.e. the flow of revenue accruing to a person or nation from labour services and from ownership of natural resources and capital. Personal incomes are "resources" received by individuals and/or private households. They consist of income from work, capital income and transfers.

Every analysis of income distribution faces some conceptual problems regarding definition of income, income unit and time period. (Atkinson, 1983) First, income definitions are determined by the objectives of the analysis, but also by the data available. There may also be more appropriate measures of access to economic resources, like wealth or consumption. Second, different results can be obtained based on the choice of the basic unit of measurement. Income inequality for households will be lower than for individuals because of pooling incomes and intra-family transfers. Third, ignoring life cycle effects can significantly overstate income inequality. Effect of age differences on inequality should be kept in mind when analysing annual incomes.

According to Hicksian definition, income is the value of consumption which does not diminish wealth and income concepts correspond, accordingly, to different concepts of consumption. Bojer (2003) distinguishes between cash income (cash consumption), market income (cash income plus services from durable consumer goods), extended income (market income plus consumption paid for by the government, e.g. healthcare and education, and home production) and full income (extended income plus leisure).

In most empirical analyses, income corresponds to market income, which is a sum of wages (wage rate times work time), capital income, self-employment income and income from pre-paid contributions (occupational pensions, unemployment and sickness benefits).[14] Disposable income is defined as the total income (market income plus social transfers) after deduction of taxes.

[14] This is only partly true. Imputed rents from other durables except self-owned homes are difficult to measure and capital income is generally underestimated in distribution data. (Atkinson and Bourgignon, 2000)

The consumption based income definition is also present in defining the recipient unit. Income is earned by individuals, but it is often spent by households (a group of people living together and sharing income and consumption). It has therefore become a standard procedure[15] to analyse the distribution of household income, i.e. the sum of individual incomes of the household members. To obtain a possible consumption per household member, a household income has to be divided by the household size which is measured by equivalent adult scale. Equivalence scales are usually given by formula n^e, where n is the number of household members and e is the elasticity of household economies of scale and it is scale specific.[16] In this way, the concept of household income per equivalent adult assigns the same equivalent income to each member of the household.

There are three different income units an analysis can be based upon: a household (distribution of household incomes), an individual who is a part of a household (distribution of household equivalent incomes) and an individual (distribution of individual incomes).

Income data generally refer to a well-defined period: a week, a month or a year, and the choice of period will have an effect on the analysis. There are two arguments in favour of choosing a longer time period: age differences in the population and the sensitivity of income to transitory shocks. The classical life-cycle pattern predict that income increases when individuals enter working life, continues to rise as individuals gain experience in the labour market and accumulate capital assets, and declines when moving into retirement. This pattern can also be found for household income, where young families are compared with young individuals. Moreover, in the presence of perfect capital markets, annual income may be affected by occasional illness, unemployment or pregnancy, and still have no influence on consumption.

In both cases, a lifetime income would be a better choice; but such data are difficult to construct (lifetime income is not known before person's death), capital markets are not perfect and consumption is determined by preferences over time. And therefore, most analyses of income inequality use annual income, which is a real constraint on present consumption.

[15] See income analyses by OECD, LIS (Luxemburg Income Study), Statistics Norway, Census Bureau.
[16] Another widely used set og scales is the OECD- and EU- scale which assigns 1 (1) to the first adult, 0.7 (0.5) to the second adult and 0.5 (0.3) to each child, respectively.

3.1. MEASURES OF INCOME INEQUALITY

Distribution of income has some special characteristics as presented in Atkinson and Bourgignon (2000). Its frequency distribution function is typically asymmetric and has a heavy right tail because of few, but extreme, high incomes. Most of the incomes are therefore concentrated around the lower end of the income range. This again implies that the median income[17] is lower than the mean income, i.e. most people have en income lower than the average.

In general, there are two techniques used to measure the distribution of income: inequality measures and concentration curves. *Percentile distributions* are used to compare one percentile to another, e.g. the share of total income between percentiles. *Lorenz curve* and *Gini coefficient* are used to graphically display and quantify the extent of income inequality. *Coefficient of variation* measures the relative variation independent of the mean income level. *Atkinson's index* is a welfare-based inequality measure that quantifies the social loss involved in unequal income distribution in terms of shortfalls of equivalent incomes, *Theil's entropy index* measures income inequality, based on the expected information content of the situation.

Desirable properties for income inequality measures are given by following axioms:

- *The Pigou-Dalton transfer principle*: any income transfer from a rich person to a poor person should be registered as a fall (or at least not as an increase) in equality.
- *Anonymity (or symmetry)*: it does not matter who the high and low earners are.
- *Population independence*: inequality does not change by changes in the size of the population.
- *Income scale independence*: if each individual's income changes by the same proportion, then inequality should not change.
- *Normalization*: if all individuals have the same income, there is no inequality.

[17] Median income is a value that cuts off the lower 50% of units; i.e. there is an equal number of units with the income below and above that value. Compared with the mean, median is less affected by extreme income observations and therefore a better measure of the centre of the distribution.

Although most of the measures discussed above generally meet the set of desirable axioms, it is possible that they will rank the same set of distributions in different ways. As seen in Bojer (2003) and table B-2 in appendix B, different measures can give different, and even contradictory, answers because of their differing sensitivity to incomes in different parts of the distribution. When rankings are ambiguous, that is when underlying Lorenz curves intersect (explained in chapter 3.1.2.), the analysis has to be aimed towards different parts of the distribution.

In addition to describe the distribution of incomes, analyses are often interested in explaining the distribution. Decomposition of inequality measures by population subgroup and/or by income source can show structure of the distribution and underlying patterns in inequality. Decomposition by groups implies division of the population into mutually exclusive groups, for instance by gender, age or occupational status. Both the World Bank and Cowell (2000) include additive *decomposability* - if inequality rises among each sub-group of the population, so should the overall inequality – as an additional axiom for inequality measures (Litchfield, 1999). This technique separates the overall inequality into two parts; the within-group and between group inequality. The only class of inequality measures that are additively decomposable are the generalised entropy measures.

Decomposition by income source shows contribution of each income component to overall inequality. The process of decomposition is described in chapter 3.1.4.

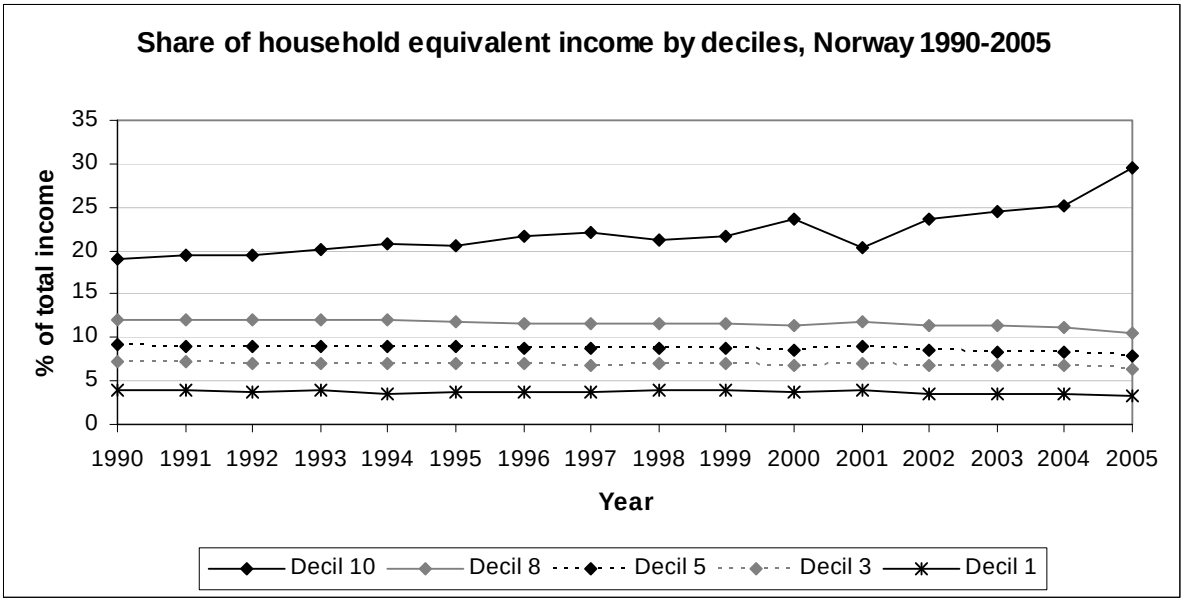
Another important property of most inequality measures is that they are ordinal (Bojer, 2003). They can be used to compare inequalities in income distributions but they cannot measure differences in inequalities. However, if inequality measures are computed in a well explained and consistent way, they can still provide a good tool for quantitative comparisons of inequalities.

3.1.1. Percentile distribution

In descriptive statistics, percentiles provide estimation of proportions of the data that fall below and above a given value. The P^{th} percentile is a value such that P% of the observations are less than this value and that $(100 - P)$% are greater. For example, the 1st percentile, or $P1$, cuts off lowest 1% of data and the 99th percentile, or $P99$, cuts off lowest 99% (or highest 1%) of data.

Most of the income distribution analysis begins by sorting the units after their respective income and dividing them in groups by choosing the number of fractions for analysis. Median, quartiles, quintiles and deciles (figure 4) divide units in two, four, five and ten groups respectively. All are frequently used in analysis of income distribution.[18]

Figure 4: Distribution of after-tax household equivalent income, by deciles and time



Source: Statistic Norway (StatBank)

Another popular measure is the decile dispersion ratio, which uses average income of selected deciles to measure the distance between the top and the bottom of the distribution ($P90/P10$) or the distances between these ends and the median ($P90/P50$ and $P50/P10$).[19] Even though it is easy to calculate and interpret, it ignores information about the whole distribution and therefore does not satisfy the Pigou-Dalton transfer principle.

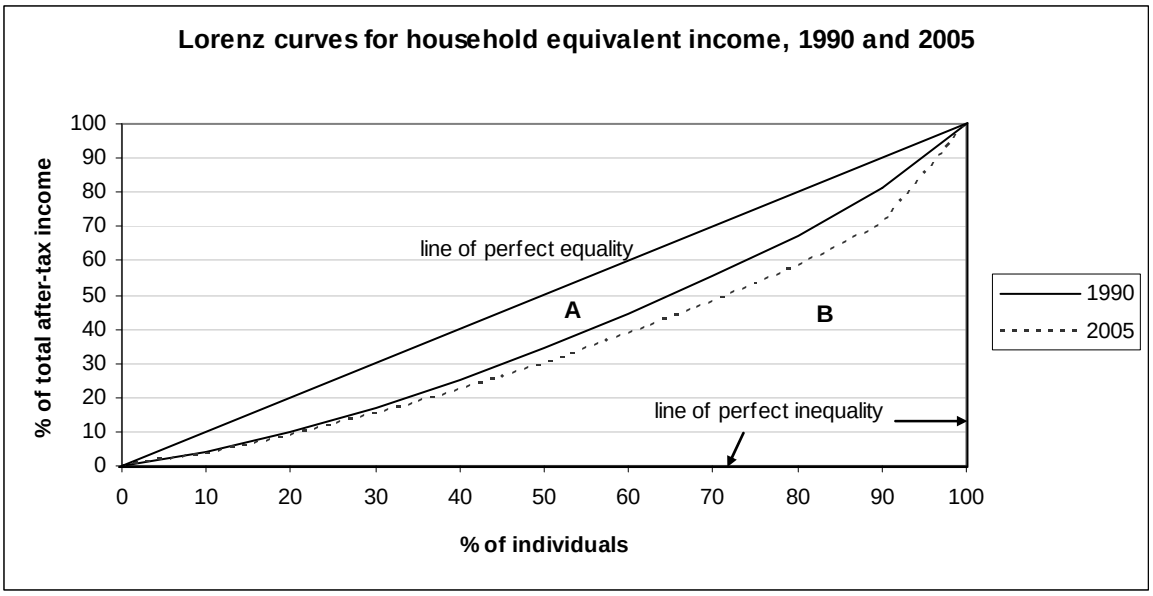
[18] Quartiles are used in the Income Statistics for Persons and Families 2002-2003 (2005) and deciles in the Income and Property Statistics for Households 2002 (2004)

[19] Some selected percentiles and percentile ratios are given in table B-2 (appendix B).

3.1.2. The Lorenz curve and the Gini coefficient

The Lorenz curve is a graphical representation based on the cumulative distribution function. It shows the bottom share of individuals or groups (x) and the corresponding share of total income ($L(x)$). As illustrated in figure 5, the Lorenz curve always starts at (0,0) and ends at (1,1)[20]. In the case of perfectly equal distribution (each share of individuals gets the same share of income), $L(x) = x$ and the Lorenz curve is the 45° line; called the line of perfect equality. In case of perfectly unequal distribution (one individual gets the total sum of incomes), $L(x) = 0$ for $x<1$, $L(1) = 1$ and the Lorenz curve will follow the arrows in the figure; called the line of perfect inequality.

Figure 5: The Lorenz curve and the Gini coefficient



Source: Statistic Norway (StatBank)[21]

In order to rank distributions by degree of inequality, we can apply the concept of Lorenz dominance. If the Lorenz curve of distribution $\mathbf{y}_1$ lies nowhere below and at least somewhere above the Lorenz curve of distribution $\mathbf{y}_2$, then $\mathbf{y}_1$ Lorenz dominates $\mathbf{y}_2$. As seen in figure 5, household equivalent income has become more unequal since the 1990 since the Lorenz curve for 1990 dominates the Lorenz curve for 2005 (dotted line).

[20] The numeration used in figure 5 is (100%, 100%) which is equivalent to (1, 1).
[21] The same data are used for computations in figures 4 and 5.

The Generalized Lorenz curve which depict both the level and the inequality of distribution is obtained by multiplying the Lorenz curve with the mean. The dominance property is defined analogously.

If one distribution Lorenz dominates the other, all inequality measure which satisfy anonymity and the Pigou-Dalton transfer principle will rank these two distributions in the same way. However, if the underlying Lorenz curves cross, different inequality measures may give different rankings and the criterion of Lorenz dominance can no longer be used. The choice of measure(s) then depends on the object of interest, the part of the distribution when the Lorenz curves cross and on properties of different measures.

The Gini coefficient is deduced from the Lorenz curve diagram. As illustrated in figure 5, the Gini coefficient is defined as a ratio between the area A (under the line of perfect equality and above the Lorenz curve) and the whole area under line of perfect equality, A+B. Since A+B=.5, the Gini coefficient is G=A/(A+B)=A/.5=2A=1-2B.[22] One of the formulas for arithmetic calculation of the Gini coefficient is given by

$$G = \frac{2\sum_r ry_r}{n^2\mu} - \frac{n+1}{n}$$

where the observed incomes y are ranked according to size, r is the ranking number, n is the number of observations (people) and μ is the mean (income) value. Here, 0 corresponds to perfect income equality and 1 to perfect income inequality.[23]

The Gini coefficient has been the most popular inequality measure. It is easy to calculate, it is rather intuitive due to its graphical interpretation of the Lorenz curve, and it gives more weights to the central part of the distribution (part with the largest number of observations). On the other hand, it is not additively group decomposable. Because of that, entropy measures are frequently used in addition to Gini coefficient.

[22] If the Lorenz curve is represented by the function, the value of B can be found by integration. (Sydsæter, 2003).
[23] The Gini index is the Gini coefficient expressed as a percentage (Gini coefficient multiplied by 100).

3.1.3. The General Entropy class of measures and the coefficient of variation

The formula for computing entropy measures is given by

$$I(\alpha)=\frac{1}{\alpha(\alpha-1)}\left[\frac{1}{n}\sum_j\left(\frac{y_j}{\mu}\right)^{\alpha}-1\right] \quad \text{for } \alpha\neq 0,1$$

where y_j is the income of person j.[24]

The particular entropy measure depends on the choice of the parameter α. In theory, this can be any real number, positive, negative or zero. But in practice, this choice is usually restricted by the data; α must be strictly positive if 0 incomes occur, or an even (positive or negative) integer if there are negative incomes.

The choice of α determines how the entropy measure weights different parts of the distribution. If α is large and strictly positive, high incomes will be given larger weights, while for negative α, the small incomes will have the greatest influence.

Entropy measures can be transformed into other inequality measures which are ordinally equivalent. For instance, entropy measure with $\alpha=2$ is a strictly increasing transformation of coefficient of variation, *v*.

$$I(2)=\frac{1}{2}\left[\frac{1}{n}\sum_j\left(\frac{y_j}{\mu}\right)^{2}-1\right]=\frac{v^2}{2} \qquad \text{where } v=\frac{\sqrt{1/n\sum\left(y_j-\mu\right)^2}}{\mu}$$

This explains why the coefficient of variation, *v*, and its square value, v^2, are frequently used in the income analysis. They allow both for negative or zero incomes, can easily be computed and have other desirable properties of the general entropy class of measures.

Another transformation leads to Atkinson inequality measures which allow for differing attitudes to inequality. The parameter is given by $\alpha=1-\varepsilon<1$ where ε is the Atkinson parameter (the degree of inequality aversion) and has to be strictly positive. Atkinson measures are also interpreted as the social cost of inequality and are therefore cardinal.

[24] Formulas for computing the Theil inequality measures $I(0)$ and $I(0)$ are given in Bojer (2003)

3.1.4. Decomposition by income source

Income components are, as mentioned earlier, differently distributed among individuals. Each component's contribution to overall inequality depends on its share of total income, interaction with other components and interaction with the total income.

According to Bojer (2003), the Lorenz curve can be decomposed by interaction curves. An interaction curve shows a bottom share of individuals (x) and a corresponding share of income component i, $l^i(x)$. As with the Lorenz curve, if an income component is distributed equally, the interaction curve will coincide with the line of perfect equality. The interaction curve for transfers will typically lie above the equality line, because transfers accrue mainly to the lower part of the distribution of total income. On the other hand, interaction curve for capital incomes will lie well below the equality line, because this component is highly concentrated at the top of the distribution of total income. In addition, it usually takes negative values in its lowest range, because of negative capital incomes, or rise steeply in its highest range, because of high concentration at the top.

The Lorenz curve is a weighted sum of interaction curves

$$L(x)=\sum_i \frac{\mu_i}{\mu} l_i(x)$$ where μ_i is the mean of the component i

Decomposition of Gini coefficient, proposed by Lerman and Yitzhaki (1984), combines three effects: the component share, the correlation of component with total income and the component distribution. It is given by

$$G=\frac{2\operatorname{cov}(y,F(y))}{\mu}=\frac{2\operatorname{cov}(y,r)}{n\mu}=\sum_i \frac{\mu_i}{\mu}\left[\frac{2}{n\mu_i}\operatorname{cov}(y_i,r_i)\right]\frac{\operatorname{cov}(y_i,r)}{\operatorname{cov}(y_i,r_i)}=\sum_i w_i G_i R_i$$

where w_i is a share of source i, G_i is the Gini coefficient of income source i and R_i is the correlation of income source to overall inequality relative to correlation of income source to within source inequality. Relative contribution of income source i is given as

$$w_i \frac{G_i}{G} R_i = w_i g_i$$

where g_i is the relative concentration coefficient. If $g_i > 1$, the i^{th} source increases inequality, while if $g_i < 1$, the i^{th} source decreases inequality.

An alternative decomposition of Gini coefficient is shown in Bojer (2003). It combines two effects; the component share and the effect on total income of income component *i*, given by the Gini interaction coefficient γ_i.

$$G = \sum_i \frac{\mu_i}{\mu}\gamma_i = \sum_i \frac{2\,\mathrm{cov}(y_i, r)}{n\mu}$$

This decomposition is directly deduced from interaction curves obtained by decomposition of the Lorenz curve, where the Gini interaction coefficient relates to the area between the interaction curve and the line $x = 1$.

Squared coefficient of variation gives a natural decomposition. In case of two income sources, it can be written as

$$v^2 = \frac{\mathrm{var}(Y)}{\mu^2} = \frac{\mu_1^2}{\mu^2}v_1^2 + \frac{\mu_2^2}{\mu^2}v_2^2 + \frac{2\,\mathrm{cov}(Y_1, Y_2)}{\mu^2} = \frac{1}{\mu^2}\sum_i \mathrm{cov}(Y, Y_i) \qquad \text{for } i = 1, 2$$

where *Y* is the total income and Y_i is the total income from source *i.*

This decomposition shows two effects: the inequality of each income component weighted by its share of the total income, and interaction between the two components. Contribution to total inequality ascribes half of the covariance term to each component, i.e.

$$c_i = \frac{\mu_i^2}{\mu^2}v_i^2 + \frac{\mathrm{cov}(Y_1, Y_2)}{\mu^2} = \frac{\mathrm{var}(Y_i) + \mathrm{cov}(Y_1, Y_2)}{\mu^2} \qquad \text{for } i = 1, 2$$

and the relative contribution to total inequality of component *i* is

$$\frac{c_i}{v^2} = s_i = \frac{\mathrm{var}(Y_i) + \mathrm{cov}(Y_1, Y_2)}{\mathrm{var}(Y)} \qquad \text{for } i = 1, 2$$

3.2. TRENDS IN INCOME INEQUALITY

After steady decline in the post-world war II period, within-country income inequality has been increasing over the last three decades. Cornia and Kiiski (2001) showed that inequality of different income concepts has risen in 48 out of 73 countries between 1960s and 1990s. These 48 countries (mostly developed and transitional countries) accounted for 59% of the population and 78% of the overall GDP-PPP.[25]

In the OECD countries, this trend started in the mid-1970s and was, in general, attributed to an increase in capital's share of the total income and increased earnings inequality. In the countries of former Soviet Union and Eastern Europe, changes were closely related to the periods of transition in late 1980s. Limited or even negative contribution of capital incomes was explained by the under sampling of the high income groups and underreporting of capital incomes. As a result of alternating periods with fast increases and slow declines in income inequality, countries of Latin America have been experiencing increased polarization of incomes since the late 1950s. This trend accelerated further since the mid-1980s, leading to highly unequal distribution of land and educational opportunities. In China and India, inequality started to rise after the mid-1980s. In both countries these trends were strengthened by an increasing urban/rural gap. (*ibid*.)

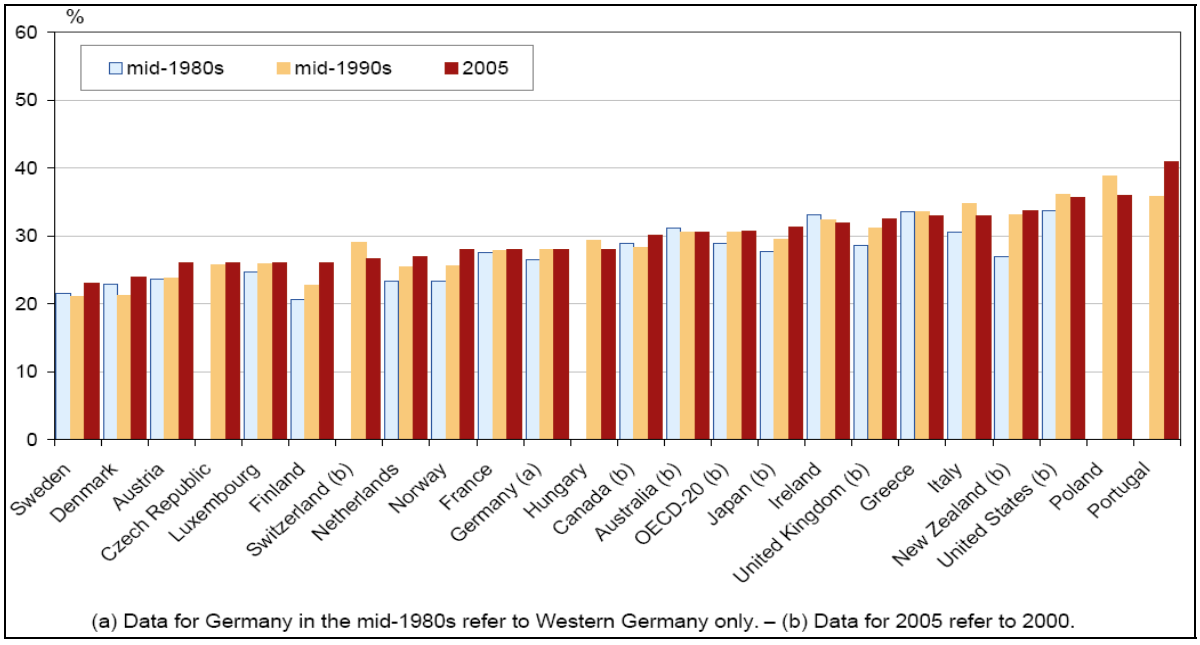
An alternative approach in explaining inequality trends, to that of calculating inequality measure such as Gini or the percentile ratio, is given by several analyses of the top of income distribution.[26] After a decrease during the first half of the 20th Century, the share of top percentiles (top 10%, top 1% and top 0.1%) in the total income started to increase. [27] Timing and the extent varied between countries. In both the UK and the US, the share of the top 1% increased from 6% and 8% in the late 1970s to 13% and almost 15% in the 1998. In Australia and India, it rose from 5% and 4% in the beginning of the 1980s to 9% at the end of the 1990s, while in France, the share of top 1% increased slightly from 7% in the mid-1980s to 8% in 1998. In addition, the share of earnings decreases as one moves up on the distribution scale, implying that the capital income is an important income source for those with highest incomes.

[25] Recent estimates of inequality levels are given in table B-7 in Appendix B
[26] See Piketty (2001) for France, Piketty and Saez (2001) for the US, Atkinson (2003) for the UK, Banerjee and Piketty (2004) for India, and Atkinson (2007) for Australia.
[27] This is consistent with the argument given by Jäntti and Sandström (2005) who argue that the increase seems to have occurred mainly through a disproportionate increase in the income share of the richest fifth.

3.2.1. OECD countries

According to Förster and Person (2002) and Förster and d'Ercole (2005), from mid-1970s to mid-1980s, a significant increase is evident only for the US and the UK. From the mid-1980s to mid-1990s, however, there is a common trend and an increase in the Gini averaged across 20 countries (OECD-20). Changes in the distribution of disposable household equivalent income, measured by Gini coefficient, are based on the same methodology and income definitions, as figure 6.[28] In the last period, the mid-1990s to beginning or mid-2000s, the largest increase occurs in countries characterized by low inequality, i.e. Scandinavian countries and with exception of Portugal, which gives minimal effect on the average, OECD-20, Gini.[29]

Figure 6: Gini coefficient of inequality in the distribution of disposable household equivalent income



Source: OECD (2005), Society at a Glance, Paris, 2005, p. 55, and Eurostat 2007[30]

Direction of changes may be different when other measures are applied. The Gini coefficient and the squared coefficient of variation reported in table B-3 (appendix B) indicate

[28] For other data limitations (different surveys, comparability,etc.) see Förster and d'Ercole (2005)
[29] This corresponds to findings from analyses of the top incomes.
[30] Downloaded from http://www.cesifo.de/pls/diceguest/download/Poverty,%20Income%20Distribution/ch-Gini-Ineq-Disp-Inc.pdf. The CESifo Group, consisting of the Center for Economic Studies (CES), the Ifo Institute for Economic Research and the CESifo GmbH (Munich Society for the Promotion of Economic Research) is a research group unique in Europe in the area of economic research.

opposite movements for several countries, among them the US[31], and direct the analysis towards different parts of the distribution. Table B-4 shows that the *real* income[32] changes including gains from the overall growth were, on average, in favour of those at the top of the distribution.

The largest part of these changes has been attributed to increased inequality of market incomes and (in) efficiency of redistribution by taxes and transfers. As shown in table B-5 (appendix B), the extent of redistribution and its reduction of overall inequality is much higher for Scandinavian and central European countries which have lower levels of market income inequality, between 36 and 47 per cent, than in the Anglo-Saxon countries, between 23 and 33 percent. This low degree of redistribution in countries with high income inequality, that is in countries that need it the most, is often referred to as the Robin Hood paradox.

According to Förster and Pearson (2002), increased inequality from mid-1980s to mid-1990s that occurred mostly among the working-age population, reflects increased earnings inequality. Analysis was based on the working-age population (18-65 years) to avoid an increasing transfer share in the incomes of the entire population, and effects on inequality, that might simply reflect the increased share of pensioners in the population. Even though capital and self-employment incomes are distributed more unequally, their contribution is considered less relevant because their share in the total disposable income is lower. In the second half of the 1990s, increase in earnings inequality has been reduced, but there has been further widening in the distribution of capital incomes.[33] If these trends continue, capital incomes may soon become more "relevant" component for the overall level of income inequality.

Even though evidence shows an increase in earnings inequality, Burniaux *et al.* (2006) showed that gains from higher employment have, in general, offset the impact of rising earnings inequality and led to an increase in the share of labour incomes, and corresponding decline in the share of capital incomes and public transfers.

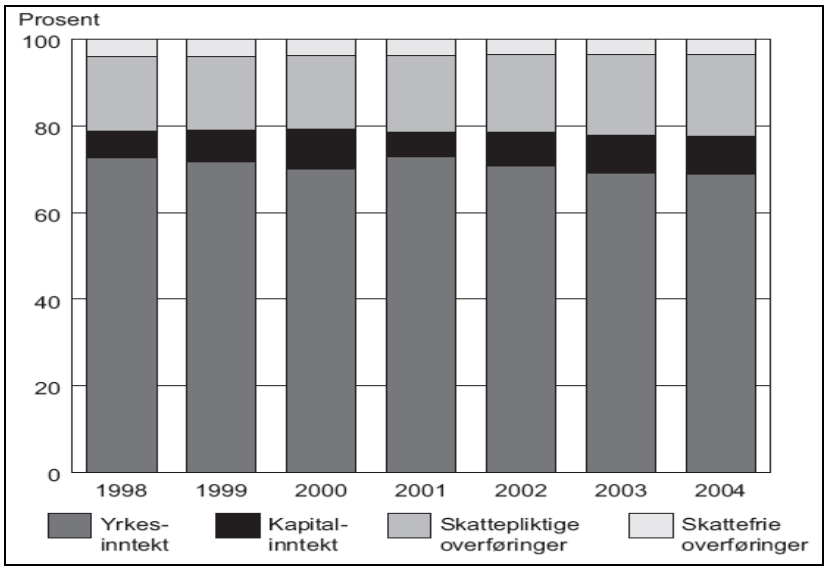
[31] Gini coefficient for the US estimated by LIS is 2 percent points higher than the one from OECD. This is more consistent with reports by the US Census Bureau where all inequality measures show the same trend (see table B-2 in appendix B).
[32] Disposable household equivalent incomes are deflated by the increase in the consumer price index.
[33] See table B-6 in Appendix B.

3.2.2. Norway

Reports from Statistics Norway[34] show a steady increase of income inequality since 1986. In the period from 1986 to 2002, the Gini coefficient for disposable household equivalent income rose from 0.245 to 0.296. This trend is continuing and can be seen in figure 4, chapter 3.1.1. While the share of the bottom decile decreased from 4.1 in 1986 to 3.6 in 2002 and further to 3.3 in 2005, the share of the top decile in the total disposable household equivalent income increased from 18.6 in 1986 to 23.6 in 2002 and to 29.5 in 2005. Moreover, alternative measures are not needed since the data show Lorenz domination as seen from figure 5, p. 18.

Changes in the composition of total household equivalent income are shown in figure 7. Wages and self-employment income (dark grey), are still the most important income source, but their share has declined from 78% in 1986, 73% in 1998, to 69% in the 2004. Share of capital income (black) increased from 5% in the 1986 to almost 8% in the 2004.[35] And while the tax-free transfers (white) have been relatively stable, around 3-4%, the share of all transfers (white and light grey) has increased from 17% in 1986 to 22%. Moreover, both earnings and capital inequality has been increasing since the mid-1880s.[36]

Figure 7: Share of each component in the total household equivalent income[37]



Source: Statistics Norway (2007)

[34] See Statistics Norway (2000, 2002, 2003, 2004)
[35] Introduction of taxes on share dividends explains most of the changes in capital income for 2000 and 2001.
[36] See table B-5 in Appendix B.
[37] "Yrkesinntekt" stands for earnings, "kapitalinntekt" for capital income, "skattepliktige overføringer" for taxable transfers (pre-paid contributions and age pensions) and "skattefrie overføringer" for tax-free transfers (social security transfers),

4. ANALYSIS OF INCOME DISTRIBUTION IN NORWAY; 1996-2004

Empirical work on income distribution is inspired by economic welfare theory and household equivalent income is used as a measure of welfare. As mentioned previously, choice of household equivalent income instead of individual income seems reasonable when shared consumption and intra-household transfers are considered. Still, giving a household equivalent income to each person has an equalizing effect on income distribution and omitting intra-household inequality can significantly understate the level of inequality.[38]

On one hand, individual income is a better measure of economic power and economic independence and, as emphasised by Bojer (2003), it measures constraints rather than welfare. On the other hand, it is a measure of status or of social respect and as such a part of social conventions.[39]

This part of the paper analyses levels and changes in the distribution of individual after-tax incomes, and how different sources contribute to overall inequality. Special attention is given to the upper part of the income distribution, i.e. to the top decile. The analysis is based on annual data from the Income Distribution Survey of Norwegian households, from 1996 to 2004.

[38] Empirical evidence show underestimated inequality by at least 30%. (Haddad and Kanbur, 1990)
[39] According to Atkinson (2005), inequality can be, at least in part, socially generated. A shift in a pay norm may also reflect on norms that govern redistribution.

4.1. TECHNICAL SUMMARY

4.1.1. Data

The Income Distribution Survey (IDS) covers the resident population, with the exception of certain residents of institutions. It is a sample consisting of households, and its individual members, that are chosen from different annual sample surveys. All sub-samples (the Level of Living Survey, the Household Budget Survey, the Household Panel of the Income Distribution Survey, EU-SILC, a special sample of self-employed, etc) included in the IDS have been selected according to Statistics Norway's sample design.

The main source of income and property data is the personal tax return obtained from the Directorate of Taxes. Additional data are collected from several administrative registers and through household interviews.

As any other sample survey, the IDS is subject to a certain amount of uncertainty. To correct for extreme observations and sample selection bias, the whole sample is weighted. These weights are in addition calibrated in order to produce estimations that are identical to totals known from registers, e.g. age-composition in the population and incomes from work.[40] Comparison with the national account and register-based statistics (IP) shows a high degree of coherence for all main income components, after correcting for different definitions and principles used in each statistics.[41]

The survey has gone through several significant changes that may have an impact on data comparability over time, for instance the tax reform in 1992. To be able to compare results, my analysis starts with 1996, when *disposable income* has been replaced by the *after-tax income* which no longer included interest payments and housing income.[42] Other relevant changes since 1996 are included in income definitions.

[40] Capital incomes are used in the calibration process from 2002. See Haugen (2005).
[41] See Epland (2002)
[42] This implied changes in components of the capital income before and after 1996. See Epland (1998).

4.1.2. Definitions[43]

Income from work (WSI)

+ *Wages and salaries*: wages and salaries from paid employment, sickness benefits, maternity and adoption grants, enumerations and benefits in kind *(WI)*
+ *Net income from self-employment*: the sum of income from self-employment and sickness benefits for self-employed after depreciation and deficit *(SI)*

+ *Capital income (CI)*

+ *Gross interest received*: interests on deposits in Norwegian banks and bonds *(R)*
+ *Share dividends received*, a gross amount *(SD)*
+ *Net realised capital gains*: gains from sales of housing, sites and other real estate, in addition to gains from sales of Norwegian and foreign stocks *(NCG)*
+ *Other capital incomes*: net income from renting real estate, dividends on a life insurance savings part and other income from abroad *(OCI)*

+ *Transfers (T)*[44]

+ *Taxable transfers*: social security benefits, service pension, unemployment benefits, alimonies (child support until 2003) *(TT)*
+ *Tax-free transfers*: family allowances, dwelling supports, scholarships, parent's tax deductions (until 2001), social assistance, maternity grant, cash for care (since 1998) and other transfers *(TFT)*

= *Total income (TI)*

- *Assessed taxes*: taxes after tax deductions
- *Negative transfers*: contributions to private and public pension schemes[45]

= *After-tax income (ATI)*

Age limit for individuals included in this kind of analysis varies in the literature.[46] To be consistent with international definitions (individuals aged below 18 are considered to be children), I have included only adults. In addition, this is approximately the age when individuals enter the labour market, or continue with higher education. Sample sizes, before and after selection (18+), are listed in table A-1 (Appendix A).

[43] Classification is taken from Statistic Norway (2005)
[44] It is important to make distinction between taxable transfers *(TT)* and tax-free transfers *(TFT)*. While former group consist of pre-paid contributions (except for minimum pensions), later group reflects targeted redistribution policies.
[45] Paid alimonies are excluded from 2003.
[46] It is 15+ for the US Census Bureau, 17+ for Statistics Norway and 18+ for Bojer (2003).

4.2. DISTRIBUTION OF INCOME

Is income inequality rising? Does the income of the rich increase the most?

An analysis of income inequality is primarily focused on the distribution of after-tax (or disposable) income; it is concerned with different size of persons' cake slices, after the market and the government have determined the size of the cake.

The first insight into income differences may be easily obtained through the decile distribution, i.e. the share of total after-tax income accruing to each decile. According to the IDS data, distribution of after-tax income has been relatively stable except at the upper end. As shown in table 1, shares of lower deciles (1-4) increased slightly until the 1999. Since then, all middle deciles (2-9) have experienced decrease in their share of total after-tax income. The share of top decile, and particularly top percentiles, is the only one with clear increasing trend except in 2001, which can be explained by changes in the tax rules.[47]

Table 1 Distribution of after-tax income between deciles

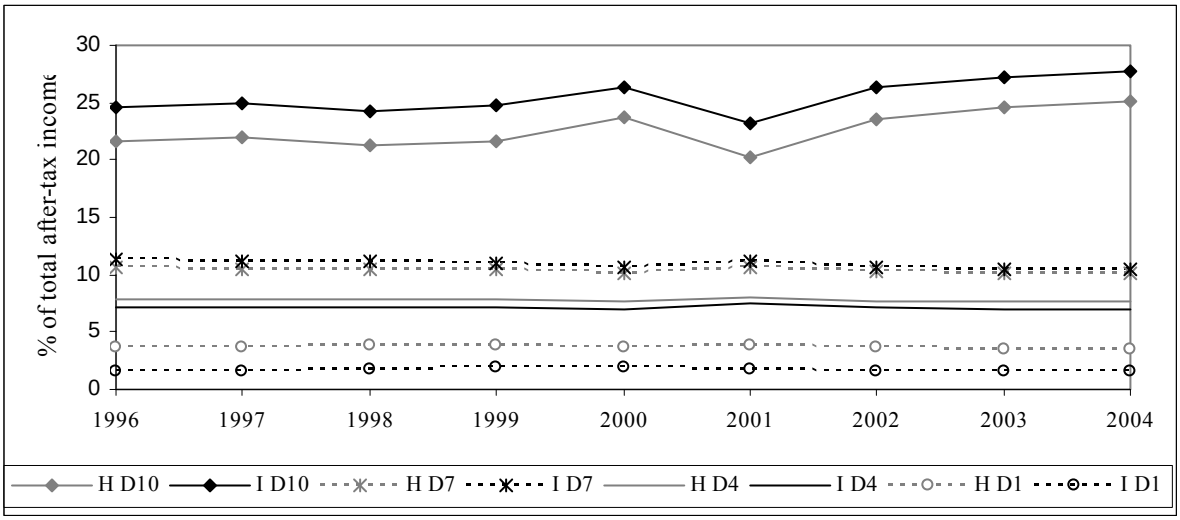
	Decile							Top	
% share	**1**	**2**	**3-4**	**5-6**	**7-8**	**9**	**10**	**5 %**	**1 %**
ATI									
1996	1,51 %	4,23 %	12,75 %	18,47 %	23,89 %	14,51 %	24,65 %	16,02 %	6,92 %
1997	1,61 %	4,25 %	12,79 %	18,35 %	23,68 %	14,42 %	24,91 %	16,31 %	7,20 %
1998	1,72 %	4,49 %	13,13 %	18,47 %	23,61 %	14,31 %	24,28 %	15,69 %	6,41 %
1999	1,96 %	4,54 %	13,04 %	18,22 %	23,26 %	14,22 %	24,76 %	16,18 %	6,78 %
2000	1,99 %	4,51 %	12,87 %	17,81 %	22,66 %	13,79 %	26,37 %	18,02 %	8,56 %
2001	1,81 %	4,78 %	13,63 %	18,70 %	23,61 %	14,32 %	23,15 %	14,57 %	5,47 %
2002	1,55 %	4,56 %	13,02 %	17,94 %	22,77 %	13,90 %	26,26 %	17,90 %	8,75 %
2003	1,60 %	4,49 %	12,91 %	17,61 %	22,40 %	13,74 %	27,24 %	18,88 %	9,41 %
2004	1,63 %	4,48 %	12,90 %	17,54 %	22,18 %	13,53 %	27,72 %	19,55 %	10,31 %

Source: Author's computations based on the Income Distribution Survey data

These results are consistent with analysis based on the after-tax household equivalent income in figure 4. However, choosing individual instead of household equivalent income is not affected by pooling incomes, and makes incomes at both end of the distribution more visible. Differences between these two concepts (selected deciles) are illustrated in figure 8.

[47] Introduction of taxes on received share dividends (above the minimum tax-free amount of 10.000 NOK) has had significant impact on the distribution both in 2000 and 2001. After high amounts of share dividends received in 2000 (probably higher than usual because of forthcoming changes), in 2001 this amount was reduced by 55% (Statistics Norway, 2004). This has had a significant impact on the distribution of capital incomes and, as expected, on higher incomes where capital is a more important income source. See also next chapter.

Figure 8: Share of household equivalent and individual income after-tax for 10th, 7th, 4th and 1st decile



Source: Author's computations based on the Income Distribution Survey data

Even though decile distribution shows skewness towards the top of the distribution, it does not account for personal differences of people in each decile that can be a potential bias. It is reasonable to assume that students or pensioners are likely to be in the lower deciles and observed changes can simply reflect increased number of students or ageing population.

Table 2 shows the distribution of after-tax income among different age groups and relative difference in income share between 1996 and 2004 (last row in the table).[48] Income share has declined for all age groups below 45 and increased for persons in the second half of their life, especially for those (45-54). Share of the most elderly (80+) has been stable.

Table 2 Distribution of after-tax income between age groups

	Age_group						
% share	**18-24**	**25-34**	**35-44**	**45-54**	**55-66**	**67-79**	**80+**
ATI							
1996	6,18 %	21,66 %	23,90 %	21,37 %	13,52 %	10,00 %	3,36 %
1997	6,03 %	21,77 %	23,17 %	21,99 %	14,11 %	9,59 %	3,34 %
1998	6,17 %	21,22 %	23,33 %	22,17 %	14,00 %	9,49 %	3,62 %
1999	5,86 %	21,34 %	22,76 %	22,15 %	14,58 %	9,68 %	3,62 %
2000	5,93 %	20,73 %	23,29 %	22,06 %	15,34 %	9,09 %	3,56 %
2001	5,97 %	21,17 %	23,01 %	21,55 %	15,84 %	8,99 %	3,47 %
2002	5,47 %	19,10 %	22,82 %	23,00 %	17,43 %	8,63 %	3,55 %
2003	5,23 %	18,41 %	23,63 %	22,11 %	18,16 %	9,02 %	3,45 %
2004	5,23 %	18,41 %	23,63 %	22,11 %	18,16 %	9,02 %	3,45 %
Rel.diff 96-04	-2,48 %	-4,75 %	-8,56 %	2,16 %	0,51 %	0,54 %	-0,02 %

Source: Author's computations based on the Income Distribution Survey data

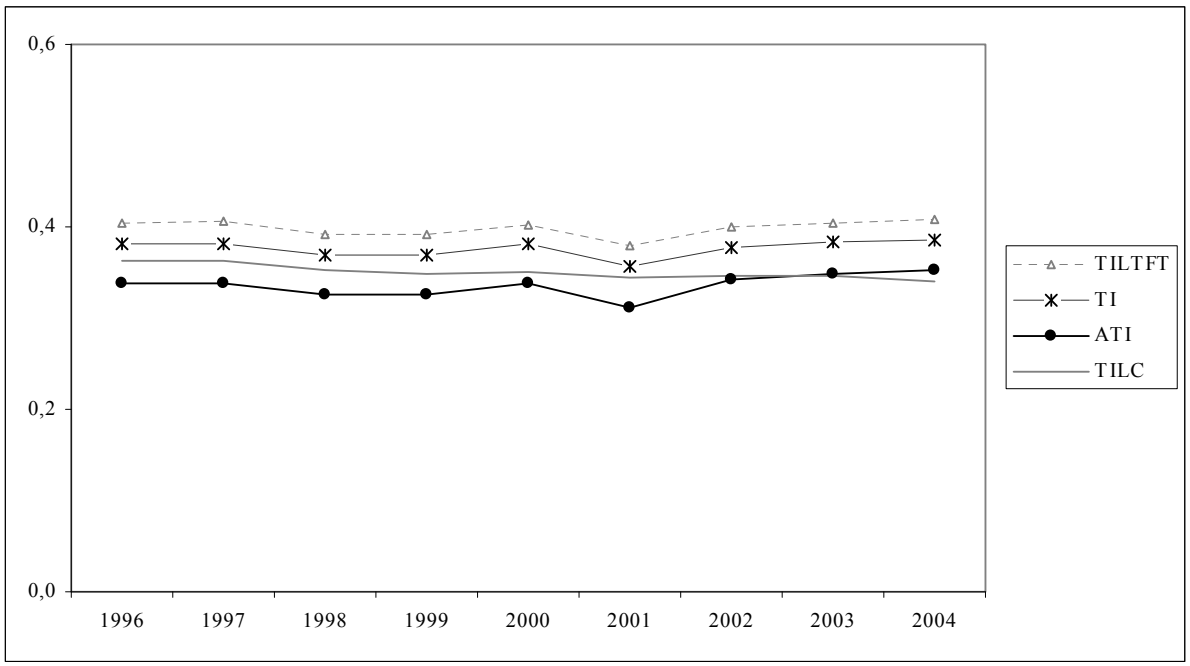
[48] Income share of each group is weighted by its share in the population.

Changes in the income distribution between deciles and/or age groups affect the overall income inequality. In order to isolate for some of these underlying patterns, income inequality is measured for four different income concepts:

- *TILTFT* - total income less tax-free transfers - refers to income determined through the participation on the market and without targeted transfers
- *TI*- total income- includes both market incomes (from labour and capital) and transfers
- *ATI*, after-tax income, is the income after redistribution by both taxes and transfers
- *TILC*, total income less capital income

Income inequality, measured by the Gini coefficient and its standard deviation, has slightly increased since the 1996 for all income concepts except the *TILC*. Figure 9 and table A-2 in appendix A show that inequality has been highest for the "market income", *TILTFT*, where Gini increased from 0,405 to 0,408. *TI* includes targeted transfers and the inequality level has, therefore, been lower (0,382 in 1996 and 0,385 in 2004). Effect of taxes, included in *ATI*, is reflected in further reduction of inequality. However, this reduction was larger in 1996 (0,338) than in 2004 (0,352). Inequality of *TILC* has been continuously decreasing, from 0,362 to 0,340. This suggests that earnings inequality cannot explain the increasing trend in overall inequality.

Figure 9: Inequality for different income concepts, measured by Gini

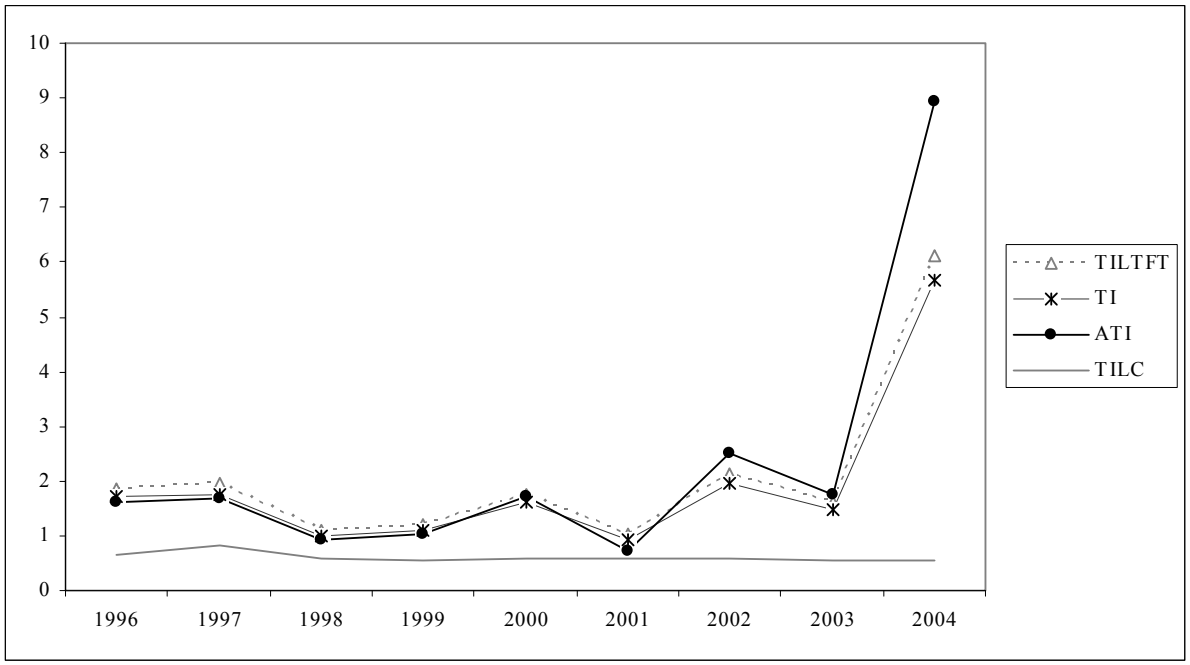


Source: Author's computations based on the Income Distribution Survey data

Reduced levels of inequality of *TI* and *ATI* are results of redistributive policies, i.e. targeted transfers and taxes. However, they all follow the same pattern implying that increased inequality of "market incomes", and particularly capital incomes, is indeed the major cause of increased inequality of after-tax incomes. It is interesting to see that since 2002, inequality of income without capital has been lower than that of after-tax income. This indicates lower progressivity of taxes on capital incomes, and points towards redistribution policy as the second cause of increased income inequality.

The squared coefficient of variation, in figure 10 and table A-2, shows similar results for income inequality. Both measures show changes in the same direction except in 2003 when inequality of *TILTFT, TI* and *ATI* increases measured by Gini but decreases when measured by SCV. Even though this measure puts more weight on the upper part of the income distribution, inequality of *TILC* follows the same decreasing trend, from 0,663 in 1996 to 0,549 in 2004. This implies that annual variations in inequality of *TILTFT, TI* and *ATI* reflect changes in the share of capital incomes accruing to the very rich. This is quite intuitive since capital incomes are highly concentrated and represent a more important source of income for those in the top of the income distribution.

Figure 10: Inequality for different income concepts, measured by SCV



Source: Author's computations based on the Income Distribution Survey data

Until 2001, different income concepts are ordered in the same way as by the Gini coefficient. Measured by the SCV, inequality level of *TILTFT* (1,031) was reduced both by transfers (0,938 for *TI*) and taxes (0,728 for *ATI*). However, since 2002, inequality of after-tax income has been increasing and in 2004 it shows more unequal distribution (8,929) than both *TILTFT* (6,129) and *TI* (5,678). This leads to conclusion that inequality of capital incomes is the major source of total inequality in the upper part of the income distribution. In addition, lower progressivity of taxes on capital incomes is much more evident when measured by the squared coefficient of variation.

Tables A-3 and A-4, in appendix A, provide some additional information about effect of tax-free transfers, taxes and capital incomes. Decile distribution confirms that targeted transfers are efficient and do reduce inequality by increasing the share of lower deciles (1-6) in the total income. The main beneficiaries of *these* transfers are individuals between 18 and 44 years, which is not surprising, since both students and young families are target groups for tax-free transfers.

Effect of taxes is obvious from a decrease in shares of higher decile groups (7-10), where the degree of progressivity increases towards the top decile. However, after 2001, the top percentile has not been affected by taxes in the same way as the lower part of the top decile (P90-P99). Its share of total income in 2004 is *lower* (9,55 %) than its share of after-tax income (10,31 %), which implies that taxes lose their progressivity when it comes to the income source of the richest percentile. Since taxes show strongest impact on the income share of working-age groups (34-66), it is reasonable to assume that progressivity "works" for labour income, but not for capital income.

Distribution of total income without capital, compared with the distribution of total income, shows increase in income shares for all except the top decile. This confirms previous assumption about different income source for the rich. Data indicate highly unequal distribution of capital incomes (going mostly to the top percentiles) and their increasing importance as the source of income since 1996. The fact that capital income, being a return to assets, is mostly accruing to middle-aged individuals (45-66), agrees with the life-cycle pattern of the income distribution.

4.3. DISTRIBUTION OF INCOME COMPONENTS

Is there an increase in earnings inequality and capital's share of the total income?

The previous chapter indicated that earnings inequality has been stable and possibly decreasing, but it did not show the degree of inequality or changes in general importance of different income sources. Another way of explaining the overall level of inequality is to analyse the distribution of different income components and their share in the total income.

Occupational status is determined by the main source of income. The best way to start is to look at the distribution of after-tax incomes among different groups. Table 3 shows that the absolute share of each group has been almost constant. However, relative differences from 1996 to 2004 (last row in the table)[49] indicate increased shares for the self-employed and the "others", while the employees and the pensioners experienced decrease in their share of total after-tax income. This suggests that the share of wages and taxable transfers (main income sources for employees and pensioners) in the total income has been reduced, while capital income (main income sources for the self-employed and "others"[50]) has increased. Table A-5 in appendix A confirms that capital income is indeed mostly accruing to the self-employed and "others" . Moreover, "employees" is the only group whose share of income decreased after taxes, which may imply that taxes have different effects on labour and capital income.

Table 3 Distribution of after-tax income by occupational status

	occupational status			
% share	**self-employed**	**Employees**	**Pensioners**	**Other**
ATI				
1996	7,25 %	68,31 %	20,86 %	3,58 %
1997	7,11 %	68,88 %	20,32 %	3,69 %
1998	6,50 %	68,50 %	21,01 %	3,99 %
1999	6,33 %	68,88 %	21,16 %	3,63 %
2000	6,49 %	69,02 %	20,50 %	4,00 %
2001	6,50 %	69,11 %	20,79 %	3,60 %
2002	6,49 %	68,79 %	20,79 %	3,94 %
2003	6,10 %	68,59 %	21,48 %	3,82 %
2004	6,75 %	66,98 %	21,68 %	4,59 %
Rel.diff 96-04	18,70 %	-4,24 %	-0,85 %	11,75 %

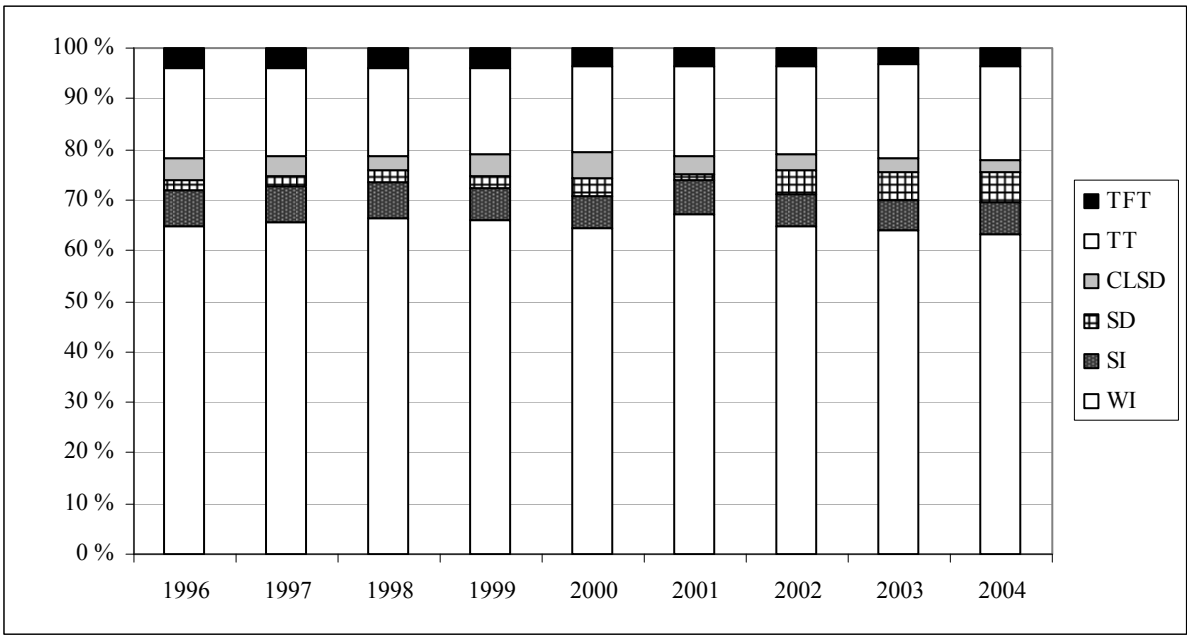
Source: Author's computations based on the Income Distribution Survey data

[49] Income share of each group is weighted by its share in the population.

[50] "Others" includes individuals that are economically inactive, i.e. their income from labour is lower than the minimum benefit to a single pensioner from the National Insurance Scheme. (Statistics Norway, 2003) This implies that both students and company owners can be a part of the group.

However, since most individuals receive their incomes from different sources, it is recommendable to look at the more relevant data before making conclusions. Figure 11 shows shares of each income component in total income similar to those reported for the household equivalent income in figure 7[51]. Although all shares have been relatively stable in this short period, there have been some minor variations. Shares of wages and self-employment incomes have decreased from 64,8 % and 7,1 % in 1996 to 63,4 % and 6,1 % in 2004. Even though the share of capital income without share dividends, *CLSD*, has decreased, received share dividends contributed to the increase of capital's share from 6,2 % to 8,5 %. The share of transfers has been stable at 21,9 % because the increase in the share of taxable transfers has been offset by the corresponding decrease in the share of tax-free-transfers. Now, it is evident that the share of incomes from labour in the total income is decreasing and that capital incomes are becoming more important source of income.

Figure 11: Share of main income components in the total income



Source: Author's computations based on the Income Distribution Survey data

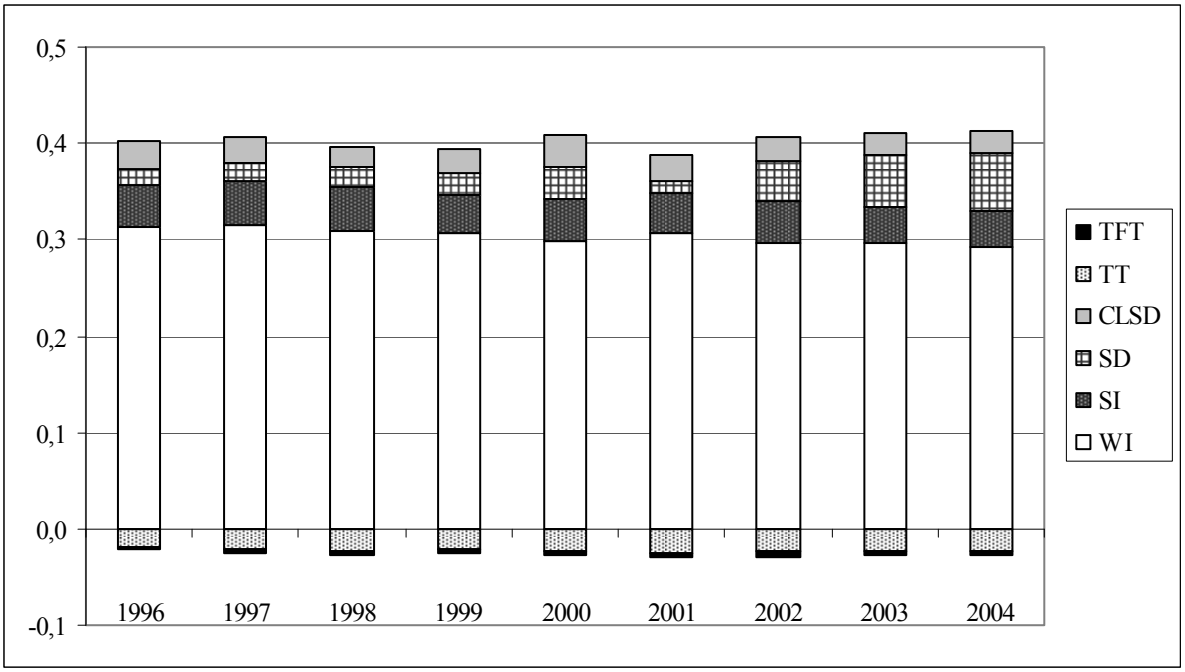
Importance of an income source is primarily determined by its share in the total income. However, its contribution to the total inequality depends also on the degree of its own inequality, interaction with other components and interaction with total income.

[51] This should not be surprising since both analyses are based on the same data sets. However, analysis of individual incomes excludes the children and their contribution to, most likely, labour income.

The contribution of each income component to overall inequality can be assessed by the decomposition described in chapter 3.1.4. Again, the Gini coefficient and the squared coefficient of variation are used, in order to reflect changes in different parts of the income distribution, i.e. both around the centre and in the top end of the distribution. Based on previous findings, one would expect wages to be a main source of inequality around the centre, while capital income should account for the most of inequality at the top of distribution.

Figure 12 and table A-6 in appendix A show contribution of main income components to total inequality measured by decomposition of the Gini coefficient. Wages and self-employed incomes account, as expected, for the largest part of inequality, but their relative contribution has decreased from 93,2 % to 85,9 %.[52] At the same time, contribution of capital incomes in general, and share dividends in particular, has been gradually increasing. Relative contribution of all capital incomes increased from 12,3 % to 21,1 %, whereas share dividends account for the increase from 4.6 % to 15,3 %. As illustrated in the figure, transfers have had a negative effect on total inequality, that is, they have reduced the overall inequality. Their relative contribution increased from -5,6 % to -7,0 %.

Figure 12: Absolute contribution of income component to overall inequality, by Gini coefficient



Source: Author's computations based on the Income Distribution Survey data

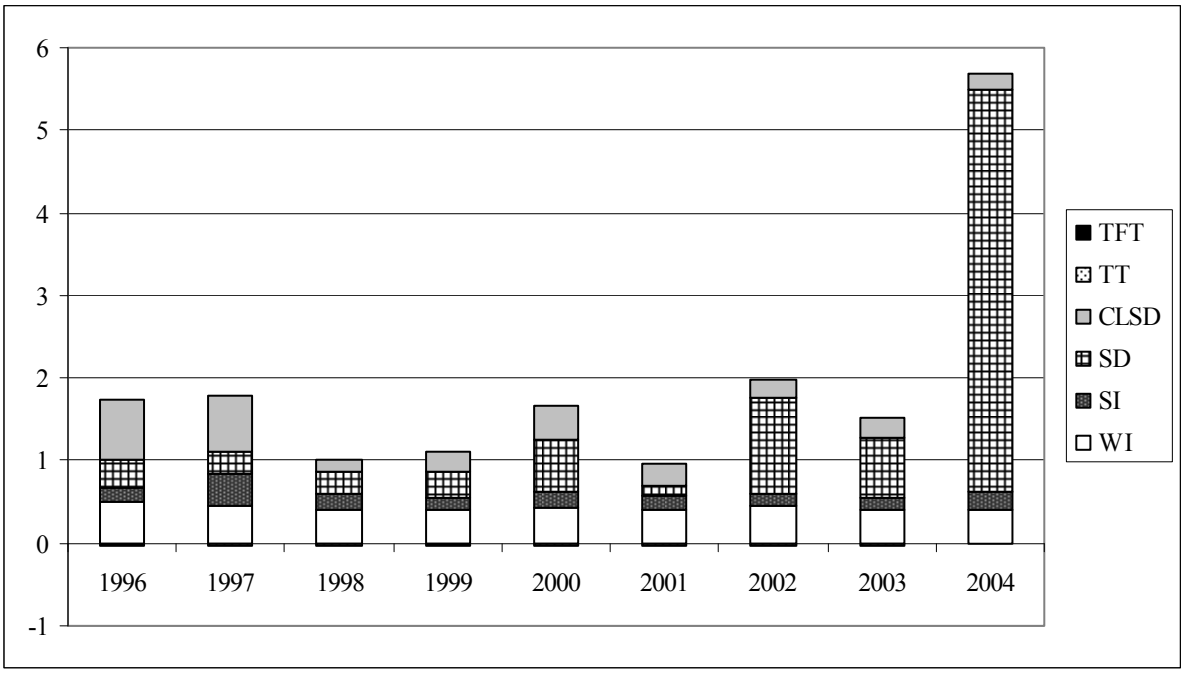
[52] Inequality of wage incomes has decreased from 82,1% to 75,8%

Unfortunately, the software programme used for computations (DAD) does not report all three elements described in chapter 3.1.4., but merely component's share in the total income and its absolute coefficient of concentration. Relative coefficient of concentration (author's computation from the reported data) comprises then two effects: components own inequality as measured by the Gini coefficient, and its correlation with the overall inequality relative to correlation of component with its own inequality.

Relative coefficient of concentration, reported in table A-6 in appendix A, shows that both labour incomes and capital incomes increase inequality, i.e. $g_i > 1$. However, its values for self-employed and capital incomes (especially share dividends) are evidently higher than for wages, and rising. This must, therefore, reflect that non-labour incomes have higher inequality and/or higher degree of correlation with the overall inequality.

As shown in figure 13, contribution of income components is somewhat different when decomposition of SCV is used. While relative contribution of wages and self-employed incomes decreased significantly from 39,3 % to 11 %, contribution of all capital incomes increased from 51,7 % to 89,3 %, and from 20,7 % to 85,6 % for share dividends alone. Contribution of transfers is negative also here, but their relative effect is minimal, from -1 % to -0,2 %.

Figure 13: Absolute contribution of income component to overall inequality, by SCV



Source: Author's computations based on the Income Distribution Survey data

This large contribution of capital incomes confirms, again, the high concentration of capital incomes at the top of the distribution. As shown in table A-7 in appendix A, DAD reports only absolute and relative contribution and corresponding standard deviation, while relative coefficient of concentration can be computed using component's share in the total income. Accordingly, it is impossible to distinguish between two contribution effects: component's own inequality and its interaction with other components.

Additional information about the distribution of different income components is provided in tables A-7, A-9 and A-10 in appendix A.

As expected, the highest share of total wages accrues to the working-age population (25-66) and "employees". Data show quite unequal decile distribution, similar to that of the total income, which agrees with the high relative contribution of wages to overall inequality when measured by Gini. Moreover, the share of total wages for the upper deciles (8-10) has been decreasing, which can be explained with decreasing wage share in the total income, but also with increased importance of some other income sources. In 2004, for instance, the top percentile's share is 9,55 % of total income, but only 3,17 % of total wage income.

Self-employment and capital incomes, on the contrary, show much higher degree of concentration. While the "self-employed", adults (35-54) have the largest share of total self-employment income, capital income is mostly accruing to middle aged (35-66) "employees" and "pensioners". This should not be very strange since most people receive their incomes from different sources. Decile distribution shows that the top decile's share of total self-employment income has been stable (50%), while its share of total capital income increased from 72,3 % in 1996 to 91,4 % in 2004. Increasing share of capital in the total income, therefore, benefits mostly to those in the top. For instance, more than 80% of total share dividends accrue to the top 1%. This explains increased contribution of capital incomes, and particularly share dividends, to overall inequality in the upper part of the distribution, i.e. when measured by SCV.

Share of total taxable transfers is highly concentrated among the elderly (67-79) "pensioners". Their negative contribution to inequality is evident from the decile distribution, which confirms that they are mostly accruing to individuals in the lower part of the distribution.

4.4. CONCLUSION

Income inequality in Norway is increasing[53] and can be explained by the disproportionate increase of the share of income accruing to the rich (top percentiles). Increased inequality of "market incomes" and inefficient taxation of capital incomes are main causes of increased inequality of after-tax income. Different effects taxes have on labour and capital income can be explained by the so-called dual income tax, which limits progressivity to the taxation of labour income, while capital income is taxed at the flat rate of 28 per cent, equal to the rate of corporate income tax.

Decomposition of inequality by income sources does not show whether earnings inequality is rising or not. Its decreased contribution to overall inequality may simply reflect decreasing wage share in the total income. However, results suggest that earnings inequality has been constant or reduced since the 1996. On the other hand, capital's share of the total income is increasing. Capital's growing share and its high concentration among the richest explain increasing contribution of capital incomes to total inequality.

Finally, I want to point out that all given results show inequality in absolute terms. According to OECD analysis, distribution of real income has been in favour of those at the top also in Norway. How this reflects on income inequality for different groups, and parts of income distribution, remains a topic for further research.

[53] Distribution of after-tax household equivalent income for 2005 indicates further increase in inequality of after-tax income. See Statistics Norway (2007).

5. REFERENCE LIST

Asplund, R: "A macroeconomic perspective on education and inequality", *Discussion Paper No.906*, http://www.oecd.org/dataoecd/41/25/37404508.pdf, accessed 7/10-2007

Atkinson, A. B. and F. Bourgignon (2000), 'Income Distribution and Economics' in A. B. Atkinson and F. Bourgignon (eds), *Handbook of Income Distribution*, North-Holland, Amsterdam

Atkinson T., Brandolini A. and T. M. Smeeding (2002), "Producing Time Series Data for Income Distribution: Sources, Methods and Techniques", *LIS Working Paper series No. 295*, http://www.lisproject.org/publications/liswps/295.pdf, accessed 17/9-2007

Atkinson, A. B. (2003), "Top Incomes in the United Kingdom over the Twentieth Century", unpublished work, http://www.nuffield.ox.ac.uk/users/atkinson/TopIncomes20033.pdf, accessed 6/5-2007

Atkinson, A. B. (2005), "Is Rising Income Inequality Inevitable?", *WIDER Perspectives on global development*, Basingstoke: Palgrave Macmillan, for UNU-WIDER

Atkinson, A. B. and A. Leigh (2007), "The Distribution of Top Incomes in Australia", The *Economic Record, Vol.83, No.262*, http://econrsss.anu.edu.au/pdf/DP514.pdf, accessed 11/10-2007

Banerjee, A. and Piketty, T. (2004): "Top Indian Incomes, 1922-2000", *Discussion Paper No.4632*, CEPR, London, http://www.jourdan.ens.fr/piketty/fichiers/public/BanerjeePiketty2004.pdf, accessed 14/4-2006

Bjorvatn, K. and A. W. Cappelen (2001), 'Income distribution and tax competition', *Discussion Paper 29/01*, The Norwegian School of Economics and Business Administration, http://www.nhh.no/sam/res&publ/2001/dp29.pdf, accessed 14/9-2007

Bojer H. (2003), *Distributional Justice; Theory and Measurement*, Routledge, London

Bojer H. (2005), "Income inequality and the economic position of women in Norway 1970—2002", *Memorandum No 07/2005* from the Department of Economics, UiO, http://folk.uio.no/hbojer/siena.pdf, accessed 4/5-2007

Brandolini A., Cipollone P. and P. Sestito (2002), "Earnings Dispersion, Low Pay and Household Poverty in Italy, 1977-98" in D. Cohen, T. Piketty ad G. Saint-Paul (eds), *The Economics of Rising Inequalities*, Oxford University Press, Oxford

Brandolini A. and T. M. Smeeding (2007),"Inequality: International Evidence", For *The New Palgrave Dictionary of Economics*, http://www-cpr.maxwell.syr.edu/faculty/smeeding/pdf/Palgrave_0407.pdf, accessed 01/11-2007

Burniaux, J.-M., Padrini F. and N. Brandt (2006), "Labour market performance, income inequality and poverty in OECD countries", *Economics Department Working Paper No.500*, http://www.oecd.org/dataoecd/26/55/37256444.pdf, accessed 7/10-2007

Cohen, D., Piketty, T. and G. Saint-Paul (2002): *The Economics of Rising Inequalities*, Oxford University Press, Oxford

Cornia G. A. and J. Court (2001), "Inequality, Growth and Poverty in the Era of Liberalization and Globalization", *Policy Brief No.4*, UNU/WIDER, http://www.wider.unu.edu/publications/pb4.pdf, accessed 2/4-2007

Cornia G. A. and S. Kiiski (2001), "Trends in Income Distribution in the Post-World War II Period", *Discussion Paper No.2001/89*, UNU/WIDER, http://www.wider.unu.edu/publications/dps/dp2001-89.pdf, accessed 2/4-2007

Cornia G. A. (2003), "The Impact of Liberalization and Globalization on Within-country Income Inequality", *CESifo Economic Studies, Vol.49*, http://cesifo.oxfordjournals.org/cgi/reprint/49/4/581, accessed 15/10-2007

Cowell F. A. (2000), "Measurement of inequality" in A. B. Atkinson and F. Bourgignon (eds), *Handbook of Income Distribution*, North-Holland, Amsterdam

Davies, J. B. and A. F. Shorrocks (2000), "The Distribution of Wealth" in A. B. Atkinson and F. Bourgignon (eds), *Handbook of Income Distribution*, North-Holland, Amsterdam

Gourdon J., Maystre N. and J. de Melo (2006), "Openness, Inequality, and Poverty: Endowments Matter", *World Bank Policy Research Working Paper Series 3981*, http://www-wds.worldbank.org/external/default/WDSContentServer/IW3P/IB/2006/08/01/000016406_20060801115217/Rendered/PDF/wps3981.pdf, accessed 28/9-2007

Ekelund, R.B. and R. F. Herbert (1997), *Povijest ekonomske teorije i metode*, Mate, Zagreb

Epland J. (1998), "Inntekt etter skatt; Revisjon av inntektsregnskapet i inntekts- og formueundersøkelsen for husholdninger", *Notater 98/43*, Statistics Norway

Epland J. and G. Frøiland (2002), "Husholdningenes inntekter; En sammenligning av nasjonalregnskapet og inntektsundersøkelsens inntektsbegreper", Statistics Norway, http://www.ssb.no/emner/05/01/notat_200276/notat_200276.pdf, accessed 5/10-2007

Ferreira F. H. G. and M. Walton (2006), "Inequality of Opportunity and Economic Development", *World Bank Policy Research Working Paper Series 3816*, http://www-wds.worldbank.org/external/default/WDSContentServer/IW3P/IB/2006/01/12/000016406_20060112091459/Rendered/PDF/wps3816.pdf, accessed 28/9-2007

Förster M. and M. Pearson (2002), "Income Distribution and Poverty in the OECD Area: Trends and Driving Forces", *OECD Economic Studies No.34*, http://www.oecd.org/dataoecd/16/33/2968109.pdf, accessed 7/10-2007

Förster M. and M. M. d'Ercole (2005), "Income Distribution and Poverty in OECD Countries in the Second Half of the 1990s", *OECD Social, Employment and Migration Working Papers No.22*, http://www.oecd.org/dataoecd/48/9/34483698.pdf, accessed 21/9-2007

Haddad, L. and R. Kanbur, 1990, "How serious is the neglect of intra-household inequality?", *Economic Journal*, *Vol.100, No.402*, http://www.jstor.org/cgi-bin/jstor/printpage/

00130133/di983506/98p00814/0.pdf?backcontext=page&dowhat=Acrobat&config=jstor&userID=81f0920f@uio.no/01c0a8346a6c83116336fd395&0.pdf, accessed 17/10-2007

Haugen O. (2005), "Utrekning av vekter til inntekts- og formuesundersøkingane 2000, 2001 og 2002", Statistics Norway, http://www.ssb.no/emner/05/90/notat_200526/notat_200526.pdf, accessed 5/10-2007

Jäntti M. and S.Sandström (2005), "Trends in income inequality: a critical examination of the evidence in WIID21", WIDER, http://www.rrojasdatabank.info/widerconf/JanttyStr.pdf, accessed 25/4-2007

Keister, L.A. (2005), *Getting Rich*, Cambridge University Press

Kverndokk, S. (2006), *Sammenhengen mellom inntekt, inntektsulikhet og helse*, HERO, Skriftserie 2006 : 8

Lerman R. L. and S. Yitzhaki (1985), "Income Inequality Effects by Income Source: A New Approach and Applications to the United States", *The Review of Economics and Statistics, Vol. 67, No. 1*, http://www.jstor.org/cgi-bin/jstor/printpage/00346535/di953029/95p0064n/0.pdf?backcontext=page&dowhat=Acrobat&config=jstor&userID=81f09c48@uio.no/01c0a848750050134a3&0.pdf. accessed 28/10-2007

Litchfield J. A. (1999), "Inequality: Methods and Tools", Text for the World Bank PovertyNet webside, http://www1.worldbank.org/prem/poverty/inequal/methods/litchfie.pdf, accessed 4/4-2007

Nilsen K. M. (2007), "Er det et glasstak i Norge? Lønnsforskjeller mellom kvinner og menn på toppen i arbeidsmarkedet", *Søkelys på arbeidslivet 2-2007*, http://www.samfunnsforskning.no/files/Sokelys_2007_2.pdf, accessed 2/11-2007

Nussbaum, M. (2001), "The enduring significance of John Rawls"; *The Chronicle Review*, The Chronicle of Higher Education, http://chronicle.com/free/v47/i45/45b00701.htm, accessed 28/08-2007

Pagano P. (2004), "An empirical investigation of the relationship between inequality and growth", *Economic working papers No.536*, Bank of Italy, http://www.bancaditalia.it/pubblicazioni/econo/temidi/td04/td536_04/td536/tema_536.pdf, accessed 04/5-2007

Piketty, T. (2001): "Income inequality in France 1901-98", *Discussion Paper No.2876*, CEPR, London, http://www.jourdan.ens.fr/piketty/fichiers/public/Piketty2001a.pdf, accessed 14/4-2007

Piketty, T. and E. Saez (2001): "Income inequality in the United States, 1913-1998", *Working paper 8467*, NBER, Cambridge, http://www.jourdan.ens.fr/piketty/fichiers/public/PikettySaez2001.pdf, accessed 14/4-2007

Sandmo, A. (2005) "Inequality and Redistribution: The Need for New Perspectives", *Discussion Paper 04/2005*, http://bora.nhh.no:8080/bitstream/2330/618/1/dp2005-04.pdf, accessed 14/9-2007

Sen, A. (1973), *On Economic Inequality*, Oxford University Press, Oxford

Sen, A. (1987), *On Ethics and Economics*, Blackwell, Oxford

Sen, A. (1992), *Inequality re-examined*, Oxford University Press, Oxford

Statistics Norway (2000), "*Inntekts- og formuesstatistikk for husholdninger 1986-1996*", C 581, http://www.ssb.no/emner/05/01/nos_inntektformue/arkiv/nos_c581/nos_c581.pdf, accessed 11/4-2007

Statistics Norway (2002a), "*Inntekts- og formuesstatistikk for husholdninger 1997-1999*", C 701, http://www.ssb.no/emner/05/01/nos_inntektformue/arkiv/nos_c701/nos_c701.pdf, accessed 11/4-2007

Statistics Norway (2003), "*Inntekts- og formuesstatistikk for husholdninger 2000*", C 750, http://www.ssb.no/emner/05/01/nos_inntektformue/arkiv/nos_c750/nos_c750.pdf, accessed 11/4-2007

Statistics Norway (2004), "*Inntekts- og formuesstatistikk for husholdninger 2002*", D 310, http://www.ssb.no/emner/05/01/nos_inntektformue/nos_d310/nos_d310.pdf, accessed 13/4-2007

Statistics Norway (2004a), "Økonomisk utsyn over året 2003; Husholdningene", *Økonomiske analyser 1/2004*, http://www.ssb.no/emner/08/05/10/oa/200401/hushold.pdf, accessed 28/10-2007

Statistics Norway (2005), "*Inntektsstatistikken for personer og familier 2002-2003*", D 338, http://www.ssb.no/emner/05/90/notat_200526/notat_200526.pdf, accessed 6/4-2007

Statistics Norway (2007), "Økonomisk utsyn over året 2006; Husholdningene", *Økonomiske analyser 1/2007*, http://www.ssb.no/emner/08/05/10/oa/200701/hushold.pdf, accessed 28/10-2007

Stiglitz, J. (2003), *The roaring nineties*, Penguin Books, London

US Census Bureau Source (2006): *Income, poverty and health insurance coverage in the US*: 2005, http://www.census.gov/prod/2006pubs/p60-231.pdf, accessed 25/4-2007

Wilkinson, R. G. *The Impact of Inequality; How to make sick societies healthier*, Routledge, Oxfordshire

6. LIST OF FIGURES AND TABLES

Figure 1: Differences in income equality measured by the national Gini coefficient (mid-1995)
Figure 2: How greater inequality leads to poorer social relations
Figure 3: Inequality and growth curve
Figure 4: Distribution of after-tax household equivalent income, by deciles and time
Figure 5: The Lorenz curve and the Gini coefficient
Figure 6: Gini coefficient of inequality in the distribution of disposable household equivalent income
Figure 7: Share of each component in the total household equivalent income
Figure 8: Share of household equivalent and individual income after-tax for 10^{th}, 7^{th}, 4^{th} and 1^{st} decile
Figure 9: Inequality for different income concepts, measured by Gini
Figure 10: Inequality for different income concepts, measured by SCV
Figure 11: Share of main income components in the total income
Figure 12: Absolute contribution of income component to overall inequality, by Gini coefficient
Figure 13: Absolute contribution of income component to overall inequality, by SCV

Table 1 Distribution of after-tax income between deciles
Table 2 Distribution of after-tax income between age groups
Table 3 Distribution of after-tax income by occupational status
Table A-1: Sample size. The number of individuals; 1996-2004
Table A-2. Inequality measures of different income concepts
Table A-3. Distribution of various income concepts, by decile, top 5% and top 1%
Table A-4. Distribution of various income concepts, by age-group
Table A-5 Distribution of various income concepts, by occupational status
Table A-6. Decomposition of Gini coefficient by income source
Table A-7. Decomposition of SCV by income source
Table A-8. Distribution of main income components, by decile, top 5% and top 1%
Table A-9. Distribution of main income components, by occupation group
Table A-10. Distribution of main income components, by age groups
Table B-1. World Bank's estimates of inequality levels: income and expenditure
Table B-2. Selected measures of household income dispersion in USA, 1986-2005
Table B-3. Trends in four income inequality indicators for the entire population
Table B-4. Trends in real household equivalent income at different quintiles
Table B-5. Gini indices of market income and disposable income in 16 countries (per cent)
Table B-6. Distribution of market income components and disposable income; age 18-65

Appendix A: Results

Table A-1: Sample size. The number of individuals; 1996-2004

Year	Nr of individuals in the IDS	Nr of individuals used	Relevant observations that were excluded
1996	37980	28457	-
1997	39504	29580	-
1998	38938	29153	-
1999	26825	20004	-
2000	34851	25693	-
2001	70964	53740	-
2002	59403	44279	2 obs: 849.086 and 4.063.739 (after-tax income)
2003	44106	32455	-
2004	33989	25058	-

Table A-2. Inequality measures of different income concepts

TILTFT

	Gini	*Std*	*CV*	*Std*	*SCV*
1996	0,405	(0,005)	1,368	(0,169)	1,872
1997	0,407	(0,004)	1,394	(0,124)	1,942
1998	0,392	(0,003)	1,041	(0,045)	1,084
1999	0,391	(0,004)	1,093	(0,073)	1,194
2000	0,402	(0,004)	1,328	(0,090)	1,763
2001	0,380	(0,003)	1,016	(0,062)	1,031
2002	0,400	(0,005)	1,456	(0,145)	2,119
2003	0,404	(0,004)	1,266	(0,068)	1,602
2004	0,408	(0,008)	2,476	(0,500)	6,129

TI

	Gini	*Std*	*CV*	*Std*	*SCV*
1996	0,382	(0,004)	1,306	(0,163)	1,705
1997	0,382	(0,004)	1,330	(0,120)	1,768
1998	0,369	(0,003)	0,993	(0,044)	0,986
1999	0,369	(0,004)	1,043	(0,071)	1,088
2000	0,381	(0,004)	1,273	(0,087)	1,620
2001	0,357	(0,003)	0,968	(0,067)	0,938
2002	0,378	(0,005)	1,398	(0,141)	1,956
2003	0,383	(0,004)	1,216	(0,066)	1,479
2004	0,385	(0,008)	2,383	(0,484)	5,678

ATI

	Gini	*Std*	*CV*	*Std*	*SCV*
1996	0,338	(0,005)	1,266	(0,168)	1,604
1997	0,338	(0,004)	1,304	(0,129)	1,700
1998	0,326	(0,004)	0,962	(0,052)	0,925
1999	0,327	(0,004)	1,015	(0,096)	1,030
2000	0,338	(0,005)	1,314	(0,116)	1,727
2001	0,311	(0,003)	0,853	(0,066)	0,728
2002	0,342	(0,006)	1,583	(0,203)	2,505
2003	0,349	(0,005)	1,318	(0,082)	1,738
2004	0,352	(0,010)	2,988	(0,655)	8,929

TILC

	Gini	*Std*	*CV*	*Std*	*SCV*
1996	0,362	(0,002)	0,814	(0,058)	0,663
1997	0,363	(0,003)	0,900	(0,081)	0,811
1998	0,352	(0,002)	0,764	(0,036)	0,584
1999	0,349	(0,003)	0,741	(0,017)	0,549
2000	0,350	(0,002)	0,769	(0,020)	0,592
2001	0,344	(0,002)	0,757	(0,023)	0,573
2002	0,346	(0,002)	0,761	(0,027)	0,579
2003	0,346	(0,002)	0,741	(0,018)	0,549
2004	0,340	(0,002)	0,741	(0,028)	0,549

Source: Author’s computations based on the Income Distribution Survey data

Table A-3. Distribution of various income concepts, by decile, top 5% and top 1%

	decile							top	
% share	**1**	**2**	**3-4**	**5-6**	**7-8**	**9**	**10**	**5 %**	**1 %**
TILTFT = TI - TFT									
1996	0,88 %	3,37 %	10,99 %	17,60 %	24,21 %	15,17 %	27,78 %	18,35 %	7,63 %
1997	1,00 %	3,29 %	10,96 %	17,41 %	24,12 %	15,15 %	28,07 %	18,63 %	7,82 %
1998	1,10 %	3,55 %	11,34 %	17,77 %	23,96 %	15,03 %	27,25 %	17,85 %	6,92 %
1999	1,29 %	3,61 %	11,37 %	17,57 %	23,62 %	14,82 %	27,72 %	18,41 %	7,31 %
2000	1,30 %	3,53 %	11,22 %	17,20 %	23,01 %	14,50 %	29,24 %	20,11 %	8,94 %
2001	1,21 %	3,79 %	11,83 %	17,88 %	23,80 %	14,92 %	26,58 %	17,19 %	6,50 %
2002	1,04 %	3,64 %	11,46 %	17,36 %	23,15 %	14,60 %	28,74 %	19,51 %	8,69 %
2003	1,06 %	3,64 %	11,40 %	17,10 %	22,78 %	14,55 %	29,46 %	20,21 %	8,96 %
2004	1,04 %	3,62 %	11,41 %	17,20 %	22,59 %	14,22 %	29,93 %	20,86 %	9,88 %
TI									
1996	1,26 %	3,55 %	11,35 %	17,72 %	24,04 %	15,03 %	27,05 %	17,75 %	7,34 %
1997	1,38 %	3,55 %	11,34 %	17,56 %	23,89 %	14,99 %	27,28 %	18,01 %	7,54 %
1998	1,49 %	3,80 %	11,66 %	17,84 %	23,78 %	14,87 %	26,55 %	17,29 %	6,67 %
1999	1,66 %	3,88 %	11,69 %	17,60 %	23,43 %	14,72 %	27,01 %	17,81 %	7,04 %
2000	1,64 %	3,76 %	11,54 %	17,29 %	22,88 %	14,39 %	28,49 %	19,48 %	8,63 %
2001	1,57 %	4,03 %	12,18 %	17,97 %	23,61 %	14,76 %	25,88 %	16,65 %	6,27 %
2002	1,38 %	3,88 %	11,80 %	17,48 %	23,01 %	14,47 %	27,99 %	18,90 %	8,40 %
2003	1,39 %	3,88 %	11,72 %	17,19 %	22,67 %	14,42 %	28,74 %	19,61 %	8,67 %
2004	1,43 %	3,85 %	11,73 %	17,21 %	22,50 %	14,15 %	29,13 %	20,19 %	9,55 %
ATI									
1996	1,51 %	4,23 %	12,75 %	18,47 %	23,89 %	14,51 %	24,65 %	16,02 %	6,92 %
1997	1,61 %	4,25 %	12,79 %	18,35 %	23,68 %	14,42 %	24,91 %	16,31 %	7,20 %
1998	1,72 %	4,49 %	13,13 %	18,47 %	23,61 %	14,31 %	24,28 %	15,69 %	6,41 %
1999	1,96 %	4,54 %	13,04 %	18,22 %	23,26 %	14,22 %	24,76 %	16,18 %	6,78 %
2000	1,99 %	4,51 %	12,87 %	17,81 %	22,66 %	13,79 %	26,37 %	18,02 %	8,56 %
2001	1,81 %	4,78 %	13,63 %	18,70 %	23,61 %	14,32 %	23,15 %	14,57 %	5,47 %
2002	1,55 %	4,56 %	13,02 %	17,94 %	22,77 %	13,90 %	26,26 %	17,90 %	8,75 %
2003	1,60 %	4,49 %	12,91 %	17,61 %	22,40 %	13,74 %	27,24 %	18,88 %	9,41 %
2004	1,63 %	4,48 %	12,90 %	17,54 %	22,18 %	13,53 %	27,72 %	19,55 %	10,31 %
TILC = TI - CI									
1996	1,37 %	3,65 %	11,68 %	18,49 %	25,13 %	15,65 %	24,04 %	14,43 %	4,12 %
1997	1,48 %	3,63 %	11,72 %	18,33 %	24,98 %	15,62 %	24,24 %	14,79 %	4,49 %
1998	1,80 %	3,88 %	11,96 %	18,41 %	24,69 %	15,35 %	23,91 %	14,47 %	4,04 %
1999	1,77 %	3,99 %	12,07 %	18,32 %	24,58 %	15,37 %	23,91 %	14,44 %	3,93 %
2000	1,74 %	3,94 %	12,17 %	18,40 %	24,40 %	15,26 %	24,08 %	14,62 %	4,00 %
2001	1,99 %	4,08 %	12,35 %	18,39 %	24,31 %	15,11 %	23,77 %	14,44 %	4,32 %
2002	1,93 %	4,06 %	12,34 %	18,45 %	24,32 %	15,23 %	23,66 %	14,17 %	3,77 %
2003	1,80 %	4,11 %	12,44 %	18,42 %	24,29 %	15,35 %	23,59 %	13,92 %	3,21 %
2004	1,85 %	4,15 %	12,63 %	18,59 %	24,25 %	15,20 %	23,33 %	13,93 %	3,58 %

Source: Author's computations based on the Income Distribution Survey data

Table A-4. Distribution of various income concepts, by age-group

	age_group						
% share	**18-24**	**25-34**	**35-44**	**45-54**	**55-66**	**67-79**	**80+**
TILTFT = TI – TFT							
1996	5,36 %	20,53 %	24,20 %	23,08 %	14,32 %	9,53 %	2,97 %
1997	5,17 %	20,87 %	23,41 %	23,70 %	14,87 %	9,06 %	2,91 %
1998	5,31 %	20,51 %	23,57 %	23,72 %	14,76 %	8,88 %	3,25 %
1999	5,06 %	20,55 %	22,91 %	23,76 %	15,36 %	9,13 %	3,23 %
2000	5,04 %	19,97 %	23,67 %	23,38 %	16,24 %	8,54 %	3,17 %
2001	5,04 %	20,32 %	23,20 %	23,13 %	16,76 %	8,46 %	3,09 %
2002	4,70 %	18,33 %	23,16 %	24,15 %	18,24 %	8,23 %	3,19 %
2003	4,47 %	17,76 %	23,88 %	23,31 %	18,97 %	8,55 %	3,06 %
2004	4,27 %	17,26 %	24,30 %	22,66 %	19,33 %	8,91 %	3,26 %
TI							
1996	5,71 %	21,21 %	24,55 %	22,52 %	13,87 %	9,23 %	2,90 %
1997	5,52 %	21,47 %	23,75 %	23,17 %	14,43 %	8,80 %	2,85 %
1998	5,67 %	21,05 %	23,92 %	23,19 %	14,35 %	8,64 %	3,18 %
1999	5,41 %	21,15 %	23,21 %	23,22 %	14,94 %	8,89 %	3,19 %
2000	5,42 %	20,55 %	23,90 %	22,88 %	15,80 %	8,34 %	3,11 %
2001	5,41 %	20,81 %	23,53 %	22,66 %	16,28 %	8,26 %	3,05 %
2002	5,03 %	18,86 %	23,49 %	23,70 %	17,76 %	8,02 %	3,15 %
2003	4,80 %	18,22 %	24,20 %	22,92 %	18,49 %	8,35 %	3,02 %
2004	4,67 %	17,71 %	24,70 %	22,26 %	18,78 %	8,67 %	3,21 %
ATI							
1996	6,18 %	21,66 %	23,90 %	21,37 %	13,52 %	10,00 %	3,36 %
1997	6,03 %	21,77 %	23,17 %	21,99 %	14,11 %	9,59 %	3,34 %
1998	6,17 %	21,22 %	23,33 %	22,17 %	14,00 %	9,49 %	3,62 %
1999	5,86 %	21,34 %	22,76 %	22,15 %	14,58 %	9,68 %	3,62 %
2000	5,93 %	20,73 %	23,29 %	22,06 %	15,34 %	9,09 %	3,56 %
2001	5,97 %	21,17 %	23,01 %	21,55 %	15,84 %	8,99 %	3,47 %
2002	5,47 %	19,10 %	22,82 %	23,00 %	17,43 %	8,63 %	3,55 %
2003	5,23 %	18,41 %	23,63 %	22,11 %	18,16 %	9,02 %	3,45 %
2004	5,23 %	18,41 %	23,63 %	22,11 %	18,16 %	9,02 %	3,45 %
TILC = TI - CI							
1996	6,03 %	21,94 %	24,73 %	22,55 %	13,20 %	8,74 %	2,81 %
1997	5,80 %	22,04 %	23,99 %	23,07 %	13,77 %	8,51 %	2,83 %
1998	5,87 %	21,86 %	24,32 %	22,81 %	13,86 %	8,27 %	3,00 %
1999	5,66 %	21,99 %	23,58 %	23,13 %	14,29 %	8,34 %	3,02 %
2000	5,81 %	21,64 %	24,33 %	22,05 %	15,02 %	8,06 %	3,09 %
2001	5,60 %	21,24 %	24,11 %	22,44 %	15,85 %	7,86 %	2,90 %
2002	5,36 %	19,91 %	24,36 %	22,66 %	16,93 %	7,75 %	3,03 %
2003	5,11 %	19,35 %	24,63 %	22,48 %	17,54 %	7,87 %	3,03 %
2004	5,01 %	18,22 %	24,69 %	22,48 %	18,26 %	8,11 %	3,23 %

Source: Author's computations based on the Income Distribution Survey data

Table A-5 Distribution of various income concepts, by occupational status

% share	occupational status			
	Self-employed	**Employees**	**Pensioners**	**Other**
TILTFT = TI - TFT				
1996	7,95 %	71,75 %	18,51 %	1,79 %
1997	7,92 %	72,41 %	17,81 %	1,86 %
1998	7,28 %	71,96 %	18,39 %	2,37 %
1999	7,01 %	72,30 %	18,71 %	1,98 %
2000	7,21 %	72,31 %	18,17 %	2,30 %
2001	7,38 %	72,41 %	18,30 %	1,90 %
2002	7,28 %	71,89 %	18,56 %	2,27 %
2003	6,77 %	71,70 %	19,13 %	2,40 %
2004	7,52 %	70,34 %	19,33 %	2,81 %
TI				
1996	7,76 %	70,80 %	18,50 %	2,94 %
1997	7,73 %	71,32 %	17,90 %	3,05 %
1998	7,10 %	70,96 %	18,54 %	3,40 %
1999	6,82 %	71,34 %	18,84 %	3,01 %
2000	7,05 %	71,43 %	18,24 %	3,28 %
2001	7,19 %	71,47 %	18,43 %	2,91 %
2002	7,11 %	71,00 %	18,69 %	3,21 %
2003	6,61 %	70,83 %	19,31 %	3,25 %
2004	7,32 %	69,40 %	19,54 %	3,74 %
ATI				
1996	7,25 %	68,31 %	20,86 %	3,58 %
1997	7,11 %	68,88 %	20,32 %	3,69 %
1998	6,50 %	68,50 %	21,01 %	3,99 %
1999	6,33 %	68,88 %	21,16 %	3,63 %
2000	6,49 %	69,02 %	20,50 %	4,00 %
2001	6,50 %	69,11 %	20,79 %	3,60 %
2002	6,49 %	68,79 %	20,79 %	3,94 %
2003	6,10 %	68,59 %	21,48 %	3,82 %
2004	6,75 %	66,98 %	21,68 %	4,59 %
TILC = TI - CI				
1996	7,50 %	72,07 %	17,57 %	2,85 %
1997	7,61 %	71,97 %	17,46 %	2,96 %
1998	6,95 %	71,88 %	17,98 %	3,19 %
1999	6,45 %	72,53 %	18,07 %	2,96 %
2000	6,81 %	72,00 %	18,21 %	2,99 %
2001	7,02 %	72,25 %	17,91 %	2,82 %
2002	6,97 %	71,87 %	18,47 %	2,68 %
2003	6,47 %	71,68 %	19,15 %	2,70 %
2004	6,74 %	70,69 %	19,84 %	2,74 %

Source: Author’s computations based on the Income Distribution Survey data

Table A-6. Decomposition of Gini coefficient by income source

	Share								
Source	1996	1997	1998	1999	2000	2001	2002	2003	2004
WI	0,6477	0,6564	0,6648	0,6617	0,6430	0,6709	0,6483	0,6412	0,6342
SI	0,0708	0,0704	0,0698	0,0629	0,0658	0,0664	0,0651	0,0572	0,0605
SD	0,0189	0,0196	0,0243	0,0239	0,0339	0,0146	0,0452	0,0559	0,0614
CLSD	0,0435	0,0403	0,0297	0,0417	0,0507	0,0364	0,0301	0,0286	0,0239
TT	0,1781	0,1726	0,1728	0,1719	0,1704	0,1745	0,1766	0,1836	0,1841
TFT	0,0410	0,0406	0,0387	0,0378	0,0362	0,0372	0,0347	0,0335	0,0359

	Absolute coefficient of concentration								
Source	1996	1997	1998	1999	2000	2001	2002	2003	2004
WI	0,4837	0,4793	0,4640	0,4635	0,4645	0,4559	0,4564	0,4638	0,4600
SI	0,5994	0,6555	0,6503	0,6356	0,6627	0,6533	0,6802	0,6531	0,6447
SD	0,9433	0,9331	0,9280	0,9376	0,9540	0,8486	0,9408	0,9521	0,9598
CLSD	0,6726	0,6868	0,6654	0,6030	0,6529	0,7094	0,7838	0,7649	0,9341
TT	-0,1045	-0,1178	-0,1341	-0,1242	-0,1362	-0,1433	-0,1343	-0,1233	-0,1221
TFT	-0,0627	-0,1049	-0,1037	-0,1068	-0,1079	-0,1334	-0,1339	-0,1233	-0,1263

	Absolute contribution								
Source	1996	1997	1998	1999	2000	2001	2002	2003	2004
WI	0,3133	0,3146	0,3085	0,3067	0,2987	0,3059	0,2959	0,2974	0,2917
SI	0,0424	0,0462	0,0454	0,0400	0,0436	0,0434	0,0443	0,0373	0,0390
SD	0,0178	0,0183	0,0225	0,0224	0,0324	0,0124	0,0425	0,0533	0,0589
CLSD	0,0293	0,0277	0,0197	0,0252	0,0331	0,0258	0,0236	0,0219	0,0223
TT	-0,0186	-0,0203	-0,0232	-0,0214	-0,0232	-0,0250	-0,0237	-0,0226	-0,0225
TFT	-0,0026	-0,0043	-0,0040	-0,0040	-0,0039	-0,0050	-0,0046	-0,0041	-0,0045

	Relative contribution								
Source	1996	1997	1998	1999	2000	2001	2002	2003	2004
WI	0,8209	0,8232	0,8361	0,8315	0,7847	0,8557	0,7831	0,7762	0,7578
SI	0,1112	0,1208	0,1230	0,1084	0,1145	0,1213	0,1172	0,0975	0,1013
SD	0,0467	0,0479	0,0610	0,0607	0,0851	0,0346	0,1124	0,1390	0,1531
CLSD	0,0767	0,0725	0,0535	0,0682	0,0870	0,0722	0,0624	0,0572	0,0579
TT	-0,0488	-0,0532	-0,0628	-0,0579	-0,0610	-0,0700	-0,0628	-0,0591	-0,0584
TFT	-0,0067	-0,0112	-0,0109	-0,0109	-0,0103	-0,0139	-0,0123	-0,0108	-0,0118

	Relative coefficient of concentration								
Source	1996	1997	1998	1999	2000	2001	2002	2003	2004
WI	1,2675	1,2541	1,2577	1,2565	1,2203	1,2754	1,2078	1,2106	1,1950
SI	1,5706	1,7152	1,7627	1,7229	1,7411	1,8275	1,8004	1,7046	1,6749
SD	2,4716	2,4416	2,5154	2,5417	2,5065	2,3738	2,4899	2,4848	2,4935
CLSD	1,7625	1,7972	1,8035	1,6345	1,7154	1,9846	2,0745	1,9964	2,4265
TT	-0,2738	-0,3083	-0,3635	-0,3368	-0,3578	-0,4010	-0,3555	-0,3218	-0,3173
TFT	-0,1643	-0,2746	-0,2812	-0,2894	-0,2835	-0,3731	-0,3545	-0,3218	-0,3282

Source: Author's computations based on the Income Distribution Survey data

Table A-7. Decomposition of SCV by income source

	Absolute contribution								
Source	1996	1997	1998	1999	2000	2001	2002	2003	2004
WI	0,5136	0,4595	0,4070	0,4138	0,4359	0,4156	0,4458	0,3971	0,4148
	(0,084)	(0,024)	(0,015)	(0,021)	(0,021)	(0,018)	(0,036)	(0,013)	(0,030)
SI	0,1581	0,3715	0,1919	0,1484	0,1766	0,1645	0,1516	0,1495	0,2093
	(0,051)	(0,137)	(0,050)	(0,020)	(0,025)	(0,029)	(0,016)	(0,029)	(0,068)
SD	0,3356	0,2714	0,2722	0,3028	0,6314	0,1194	1,1708	0,7283	4,8617
	(0,134)	(0,080)	(0,054)	(0,111)	(0,174)	(0,042)	(0,384)	(0,122)	(2,248)
CLSD	0,7178	0,6928	0,1424	0,2461	0,4085	0,2659	0,2222	0,2333	0,2087
	(0,394)	(0,260)	(0,038)	(0,077)	(0,110)	(0,109)	(0,043)	(0,075)	(0,057)
TT	-0,0151	-0,0210	-0,0229	-0,0172	-0,0260	-0,0217	-0,0281	-0,0236	-0,0111
	(0,004)	(0,004)	(0,002)	(0,005)	(0,003)	(0,004)	(0,002)	(0,003)	(0,011)
TFT	-0,0047	-0,0060	-0,0049	-0,0058	-0,0059	-0,0061	-0,0067	-0,0061	-0,0060
	(0,000)	(0,001)	(0,000)	(0,000)	(0,000)	(0,000)	(0,000)	(0,000)	(0,001)

	Relative contribution								
Source	1996	1997	1998	1999	2000	2001	2002	2003	2004
WI	0,3012	0,2599	0,4129	0,3803	0,2690	0,4433	0,2280	0,2686	0,0731
	(0,082)	(0,046)	(0,036)	(0,046)	(0,036)	(0,061)	(0,047)	(0,030)	(0,029)
SI	0,0927	0,2101	0,1946	0,1364	0,1090	0,1755	0,0775	0,1011	0,0369
	(0,037)	(0,070)	(0,045)	(0,025)	(0,021)	(0,036)	(0,017)	(0,018)	(0,017)
SD	0,1968	0,1535	0,2761	0,2782	0,3896	0,1273	0,5987	0,4926	0,8563
	(0,078)	(0,042)	(0,041)	(0,073)	(0,068)	(0,040)	(0,080)	(0,044)	(0,051)
CLSD	0,4209	0,3918	0,1445	0,2262	0,2521	0,2836	0,1136	0,1578	0,0368
	(0,140)	(0,094)	(0,034)	(0,059)	(0,054)	(0,083)	(0,028)	(0,044)	(0,012)
TT	-0,0089	-0,0118	-0,0232	-0,0158	-0,0160	-0,0231	-0,0144	-0,0159	-0,0020
	(0,004)	(0,003)	(0,003)	(0,005)	(0,003)	(0,007)	(0,003)	(0,003)	(0,002)
TFT	-0,0028	-0,0034	-0,0050	-0,0053	-0,0036	-0,0065	-0,0034	-0,0041	-0,0011
	(0,001)	(0,001)	(0,001)	(0,001)	(0,000)	(0,001)	(0,001)	(0,000)	(0,000)

Source: Author's computations based on the Income Distribution Survey data

Table A-8. Distribution of main income components, by decile, top 5% and top 1%

	decile							top	
% share	**1**	**2**	**3-4**	**5-6**	**7-8**	**9**	**10**	**5 %**	**1 %**
WI									
1996	1,07 %	1,42 %	5,75 %	16,29 %	29,45 %	18,90 %	27,12 %	15,73 %	3,75 %
1997	1,08 %	1,51 %	5,88 %	16,24 %	29,58 %	18,85 %	26,86 %	15,71 %	3,72 %
1998	1,30 %	1,86 %	6,22 %	16,71 %	29,25 %	18,40 %	26,27 %	15,03 %	3,44 %
1999	1,31 %	1,91 %	6,40 %	16,50 %	29,18 %	18,16 %	26,55 %	15,33 %	3,38 %
2000	1,12 %	1,76 %	6,62 %	16,99 %	28,46 %	18,38 %	26,68 %	15,52 %	3,58 %
2001	1,32 %	1,99 %	6,72 %	17,20 %	28,34 %	18,14 %	26,29 %	15,29 %	3,66 %
2002	1,37 %	1,99 %	6,51 %	17,26 %	28,40 %	18,21 %	26,26 %	14,99 %	3,22 %
2003	1,40 %	2,01 %	6,25 %	16,71 %	27,98 %	18,61 %	27,04 %	15,25 %	2,81 %
2004	1,37 %	1,88 %	6,60 %	17,00 %	28,18 %	18,42 %	26,55 %	15,33 %	3,17 %
SI									
1996	0,11 %	1,75 %	8,47 %	12,34 %	17,23 %	12,08 %	48,03 %	35,77 %	16,61 %
1997	0,17 %	0,95 %	7,05 %	12,19 %	14,10 %	12,94 %	52,60 %	40,89 %	22,65 %
1998	0,33 %	1,53 %	5,89 %	11,75 %	14,39 %	12,92 %	53,18 %	42,01 %	19,60 %
1999	-0,47 %	2,38 %	7,23 %	11,71 %	14,21 %	13,87 %	51,05 %	40,73 %	18,98 %
2000	0,20 %	1,84 %	5,29 %	10,18 %	15,79 %	13,31 %	53,39 %	41,14 %	17,88 %
2001	0,69 %	2,18 %	6,30 %	9,38 %	14,55 %	11,81 %	55,09 %	43,34 %	22,34 %
2002	-0,31 %	1,37 %	5,73 %	9,74 %	13,86 %	14,29 %	55,33 %	42,67 %	19,56 %
2003	-0,19 %	1,94 %	7,62 %	9,99 %	14,64 %	14,20 %	51,80 %	40,57 %	17,12 %
2004	-0,23 %	2,38 %	7,15 %	11,25 %	15,59 %	12,48 %	51,39 %	39,89 %	17,05 %
SD									
1996	0,14 %	0,14 %	0,59 %	0,81 %	1,67 %	2,71 %	93,95 %	91,07 %	77,26 %
1997	0,40 %	0,37 %	0,55 %	0,93 %	1,67 %	2,46 %	93,62 %	90,11 %	77,04 %
1998	0,24 %	0,34 %	0,73 %	1,34 %	1,83 %	2,20 %	93,32 %	89,48 %	78,54 %
1999	0,23 %	0,19 %	0,27 %	1,48 %	1,30 %	1,85 %	94,68 %	90,38 %	76,43 %
2000	0,08 %	0,09 %	0,39 %	0,68 %	1,45 %	1,45 %	95,87 %	93,96 %	81,77 %
2001	2,46 %	0,93 %	1,55 %	2,14 %	3,71 %	3,72 %	85,47 %	79,30 %	60,47 %
2002	1,55 %	0,11 %	0,36 %	0,64 %	0,99 %	1,32 %	95,03 %	93,14 %	84,76 %
2003	0,48 %	0,09 %	0,30 %	0,54 %	0,92 %	1,69 %	95,98 %	94,15 %	82,86 %
2004	0,36 %	0,12 %	0,32 %	0,35 %	0,74 %	1,19 %	96,90 %	95,15 %	84,58 %
CLSD									
1996	-0,60 %	2,86 %	8,82 %	8,61 %	10,39 %	7,07 %	62,85 %	57,36 %	46,44 %
1997	-0,56 %	3,31 %	7,85 %	7,74 %	9,28 %	6,47 %	65,91 %	57,92 %	44,63 %
1998	-7,25 %	4,31 %	11,18 %	13,23 %	12,59 %	9,89 %	56,06 %	48,26 %	31,93 %
1999	0,12 %	3,48 %	9,71 %	10,82 %	10,51 %	7,61 %	57,74 %	51,70 %	36,87 %
2000	0,91 %	2,90 %	7,76 %	8,40 %	9,73 %	7,20 %	63,09 %	57,20 %	43,30 %
2001	-9,87 %	4,08 %	12,03 %	13,39 %	13,26 %	10,18 %	56,92 %	49,26 %	35,35 %
2002	-15,97 %	4,15 %	12,31 %	12,71 %	15,69 %	10,59 %	60,52 %	52,80 %	35,95 %
2003	-10,03 %	3,85 %	10,86 %	10,55 %	13,45 %	9,59 %	61,72 %	55,84 %	38,19 %
2004	-12,21 %	2,08 %	6,58 %	7,51 %	11,66 %	7,29 %	77,10 %	67,49 %	45,31 %

Source: Author's computations based on the Income Distribution Survey data

Table A-8. Distribution of main income components, by decile, top 5% and top 1% (cont.)

	decile							top	
% share	**1**	**2**	**3-4**	**5-6**	**7-8**	**9**	**10**	**5 %**	**1 %**
WSI = WI + SI									
1996	0,97 %	1,45 %	6,02 %	15,90 %	28,25 %	18,23 %	29,18 %	17,70 %	5,02 %
1997	0,99 %	1,46 %	5,99 %	15,84 %	28,08 %	18,28 %	29,35 %	18,15 %	5,55 %
1998	1,21 %	1,83 %	6,18 %	16,24 %	27,84 %	17,88 %	28,83 %	17,60 %	4,97 %
1999	1,15 %	1,95 %	6,48 %	16,08 %	27,88 %	17,78 %	28,68 %	17,53 %	4,73 %
2000	1,03 %	1,76 %	6,50 %	16,35 %	27,28 %	17,91 %	29,16 %	17,89 %	4,91 %
2001	1,26 %	2,01 %	6,68 %	16,49 %	27,10 %	17,57 %	28,88 %	17,82 %	5,34 %
2002	1,22 %	1,93 %	6,44 %	16,57 %	27,07 %	17,85 %	28,91 %	17,52 %	4,71 %
2003	1,27 %	2,00 %	6,36 %	16,16 %	26,88 %	18,25 %	29,07 %	17,32 %	3,98 %
2004	1,23 %	1,92 %	6,65 %	16,49 %	27,09 %	17,90 %	28,72 %	17,47 %	4,38 %
CI = SD + CLSD									
1996	-0,38 %	2,04 %	6,33 %	6,25 %	7,75 %	5,75 %	72,26 %	67,56 %	55,77 %
1997	-0,24 %	2,34 %	5,46 %	5,51 %	6,79 %	5,16 %	74,98 %	68,45 %	55,23 %
1998	-3,89 %	2,52 %	6,48 %	7,88 %	7,75 %	6,43 %	72,82 %	66,80 %	52,89 %
1999	0,16 %	2,28 %	6,27 %	7,42 %	7,16 %	5,51 %	71,18 %	65,79 %	51,27 %
2000	0,58 %	1,78 %	4,81 %	5,30 %	6,41 %	4,89 %	76,24 %	71,94 %	58,73 %
2001	-6,34 %	3,18 %	9,03 %	10,17 %	10,52 %	8,33 %	65,10 %	57,86 %	42,54 %
2002	-5,46 %	1,72 %	5,13 %	5,47 %	6,86 %	5,02 %	81,24 %	77,01 %	65,24 %
2003	-3,08 %	1,36 %	3,87 %	3,93 %	5,17 %	4,37 %	84,38 %	81,18 %	67,73 %
2004	-3,16 %	0,67 %	2,07 %	2,36 %	3,80 %	2,90 %	91,36 %	87,41 %	73,59 %
TT									
1996	0,96 %	11,60 %	32,66 %	28,42 %	13,70 %	6,11 %	6,54 %	3,69 %	1,31 %
1997	1,47 %	11,33 %	33,79 %	28,12 %	13,45 %	5,45 %	6,39 %	3,37 %	0,88 %
1998	2,17 %	11,19 %	34,76 %	27,39 %	12,55 %	5,60 %	6,35 %	3,65 %	0,84 %
1999	2,32 %	11,12 %	33,92 %	27,73 %	11,95 %	5,88 %	7,08 %	4,01 %	1,37 %
2000	2,74 %	11,72 %	34,04 %	26,62 %	13,51 %	5,12 %	6,26 %	3,57 %	0,99 %
2001	3,19 %	11,49 %	34,40 %	25,97 %	13,75 %	5,63 %	5,58 %	2,67 %	0,86 %
2002	3,10 %	11,34 %	34,43 %	25,60 %	14,28 %	5,55 %	5,69 %	3,07 %	0,68 %
2003	2,17 %	10,93 %	34,05 %	26,73 %	15,31 %	5,17 %	5,64 %	3,10 %	0,83 %
2004	2,23 %	11,40 %	33,70 %	26,72 %	14,32 %	5,57 %	6,06 %	2,84 %	1,12 %
TFT									
1996	10,07 %	7,65 %	19,79 %	20,70 %	20,09 %	11,80 %	9,90 %	3,70 %	0,55 %
1997	10,31 %	9,74 %	20,44 %	21,10 %	18,53 %	11,26 %	8,62 %	3,30 %	0,90 %
1998	11,28 %	10,13 %	19,77 %	19,57 %	19,17 %	10,97 %	9,12 %	3,45 %	0,53 %
1999	10,98 %	10,86 %	19,90 %	18,33 %	18,74 %	12,23 %	8,96 %	2,55 %	0,24 %
2000	10,94 %	9,92 %	20,25 %	19,82 %	19,31 %	11,21 %	8,54 %	2,60 %	0,38 %
2001	10,87 %	10,33 %	21,30 %	20,39 %	18,57 %	10,75 %	7,78 %	2,58 %	0,39 %
2002	10,67 %	10,61 %	21,16 %	20,82 %	18,94 %	10,75 %	7,05 %	1,86 %	0,20 %
2003	10,85 %	10,62 %	20,79 %	19,88 %	19,39 %	10,56 %	7,92 %	2,43 %	0,20 %
2004	11,91 %	10,16 %	20,23 %	17,44 %	20,28 %	12,27 %	7,70 %	2,34 %	0,69 %

Source: Author's computations based on the Income Distribution Survey data

Table A-9. Distribution of main income components, by occupation group

		occupational status			
	% share	**self-employed**	**employees**	**pensioners**	**other**
WI	1996	0,72 %	96,57 %	0,90 %	1,81 %
	1997	0,62 %	96,44 %	0,98 %	1,97 %
	1998	0,58 %	96,17 %	1,08 %	2,17 %
	1999	0,64 %	96,12 %	1,10 %	2,14 %
	2000	0,63 %	96,07 %	1,22 %	2,09 %
	2001	0,66 %	96,06 %	1,20 %	2,08 %
	2002	0,63 %	96,19 %	1,23 %	1,95 %
	2003	0,70 %	95,97 %	1,24 %	2,09 %
	2004	0,69 %	95,89 %	1,40 %	2,01 %
SI	1996	88,41 %	8,31 %	1,79 %	1,49 %
	1997	92,14 %	5,78 %	1,00 %	1,08 %
	1998	85,32 %	7,65 %	2,27 %	4,77 %
	1999	85,59 %	9,20 %	3,05 %	2,16 %
	2000	85,37 %	8,81 %	2,46 %	3,36 %
	2001	90,22 %	6,94 %	1,63 %	1,21 %
	2002	89,18 %	8,08 %	1,75 %	0,99 %
	2003	92,17 %	5,01 %	1,55 %	1,27 %
	2004	90,80 %	5,98 %	1,49 %	1,72 %
CI	1996	11,62 %	51,68 %	32,50 %	4,20 %
	1997	9,63 %	61,13 %	24,77 %	4,47 %
	1998	9,60 %	54,85 %	28,39 %	7,17 %
	1999	12,06 %	54,42 %	29,78 %	3,74 %
	2000	9,67 %	65,22 %	18,62 %	6,48 %
	2001	10,39 %	56,86 %	28,19 %	4,57 %
	2002	8,80 %	60,19 %	21,32 %	9,69 %
	2003	8,16 %	61,57 %	21,08 %	9,20 %
	2004	13,58 %	55,59 %	16,32 %	14,51 %
TT	1996	0,98 %	13,72 %	84,29 %	1,00 %
	1997	0,73 %	12,14 %	86,26 %	0,88 %
	1998	0,81 %	10,16 %	88,37 %	0,66 %
	1999	0,81 %	10,54 %	88,03 %	0,63 %
	2000	0,67 %	10,72 %	87,98 %	0,64 %
	2001	0,84 %	10,92 %	87,53 %	0,72 %
	2002	0,84 %	11,19 %	87,22 %	0,75 %
	2003	0,74 %	12,33 %	86,23 %	0,69 %
	2004	0,87 %	10,30 %	88,33 %	0,50 %
TFT	1996	3,25 %	48,61 %	18,41 %	29,72 %
	1997	3,26 %	45,70 %	19,95 %	31,10 %
	1998	2,50 %	46,16 %	22,29 %	29,04 %
	1999	2,00 %	46,81 %	21,98 %	29,20 %
	2000	2,75 %	47,79 %	20,08 %	29,38 %
	2001	2,12 %	47,21 %	21,71 %	28,96 %
	2002	2,39 %	46,06 %	22,15 %	29,41 %
	2003	2,09 %	45,70 %	24,46 %	27,75 %
	2004	1,94 %	44,33 %	24,98 %	28,75 %

Source: Author's computations based on the Income Distribution Survey data

Table A-10. Distribution of main income components, by age groups

	age_group						
% share	**18-24**	**25-34**	**35-44**	**45-54**	**55-66**	**67-79**	**80+**
WI							
1996	6,97 %	25,72 %	28,29 %	26,43 %	11,97 %	0,60 %	0,01 %
1997	6,77 %	26,10 %	27,13 %	26,83 %	12,56 %	0,60 %	0,02 %
1998	6,85 %	26,08 %	27,56 %	26,43 %	12,56 %	0,50 %	0,02 %
1999	6,66 %	26,33 %	27,20 %	26,25 %	13,08 %	0,46 %	0,02 %
2000	6,82 %	25,71 %	27,72 %	25,28 %	14,00 %	0,46 %	0,01 %
2001	6,60 %	25,42 %	27,47 %	25,34 %	14,60 %	0,57 %	0,01 %
2002	6,30 %	23,73 %	28,04 %	25,61 %	15,73 %	0,58 %	0,01 %
2003	5,94 %	22,74 %	28,42 %	25,73 %	16,63 %	0,51 %	0,01 %
2004	5,82 %	21,79 %	28,51 %	26,02 %	17,19 %	0,65 %	0,02 %
SI							
1996	2,12 %	15,24 %	31,69 %	30,14 %	17,15 %	3,44 %	0,21 %
1997	1,23 %	13,40 %	32,29 %	31,15 %	19,57 %	2,36 %	0,01 %
1998	1,62 %	13,77 %	31,28 %	30,98 %	19,69 %	2,36 %	0,29 %
1999	1,43 %	11,71 %	25,98 %	36,60 %	21,15 %	3,03 %	0,11 %
2000	1,49 %	13,58 %	31,17 %	31,63 %	19,18 %	3,01 %	-0,08 %
2001	1,12 %	11,96 %	28,10 %	35,05 %	21,25 %	2,44 %	0,08 %
2002	1,21 %	11,35 %	26,64 %	35,21 %	23,40 %	2,04 %	0,15 %
2003	0,92 %	14,56 %	27,67 %	32,89 %	21,76 %	2,12 %	0,09 %
2004	0,74 %	12,00 %	27,76 %	33,17 %	23,83 %	2,43 %	0,06 %
CI							
1996	0,93 %	10,23 %	21,82 %	22,09 %	24,00 %	16,63 %	4,30 %
1997	1,24 %	12,64 %	19,94 %	24,85 %	24,78 %	13,26 %	3,30 %
1998	2,15 %	6,82 %	16,78 %	29,79 %	22,96 %	15,15 %	6,35 %
1999	1,85 %	9,24 %	18,02 %	24,52 %	24,13 %	16,70 %	5,54 %
2000	1,15 %	8,85 %	19,24 %	31,87 %	24,28 %	11,29 %	3,32 %
2001	1,76 %	12,75 %	12,73 %	26,87 %	24,38 %	15,75 %	5,76 %
2002	0,97 %	5,95 %	12,81 %	36,40 %	27,91 %	11,38 %	4,58 %
2003	1,46 %	6,01 %	19,56 %	27,67 %	28,78 %	13,51 %	3,01 %
2004	1,01 %	12,22 %	24,79 %	19,97 %	24,34 %	14,69 %	2,99 %
TT							
1996	2,34 %	7,38 %	7,20 %	8,43 %	18,33 %	41,97 %	14,35 %
1997	2,06 %	6,92 %	6,86 %	8,37 %	18,32 %	42,51 %	14,96 %
1998	1,87 %	6,08 %	7,20 %	8,44 %	18,66 %	41,84 %	15,91 %
1999	1,45 %	5,86 %	7,10 %	9,19 %	18,66 %	41,87 %	15,86 %
2000	1,61 %	6,27 %	7,66 %	8,81 %	19,56 %	39,80 %	16,29 %
2001	1,51 %	6,08 %	7,97 %	9,03 %	21,12 %	38,98 %	15,31 %
2002	1,71 %	6,35 %	8,41 %	9,48 %	21,41 %	37,24 %	15,41 %
2003	1,82 %	6,76 %	8,83 %	9,84 %	21,78 %	36,32 %	14,65 %
2004	1,59 %	5,71 %	8,45 %	8,89 %	22,91 %	36,81 %	15,64 %

Source: Author's computations based on the Income Distribution Survey data

Appendix B: Complementary data sources

Table B-1. World Bank's estimates of inequality levels: income and expenditure

Gini indices

Country	Year	Gini index	Income group
High-Income economies			
Expenditure			
Taiwan	2000	0.24	HIC
Italy	2000	0.31	HIC
Israel	2001	0.35	HIC
Greece	1998	0.36	HIC
Income			
Finland	2000	0.25	HIC
Japan	1993	0.25	HIC
Sweden	2000	0.25	HIC
Belgium	2000	0.26	HIC
Denmark	1997	0.27	HIC
Norway	2000	0.27	HIC
Austria	1997	0.28	HIC
Germany	2000	0.28	HIC
Luxembourg	2000	0.29	HIC
Netherlands	1999	0.29	HIC
France	1994	0.31	HIC
Ireland	2000	0.31	HIC
Switzerland	1992	0.31	HIC
Australia	1994	0.32	HIC
Republic of Korea	1998	0.32	HIC
Canada	2000	0.33	HIC
United Kingdom	1999	0.34	HIC
Spain	2000	0.35	HIC
New Zealand	1997	0.37	HIC
United States	2000	0.38	HIC
Portugal	1997	0.39	HIC
Singapore	1998	0.43	HIC
Middle East and North Africa			
Expenditure			
Yemen	1998	0.33	LIC
Egypt	2000	0.34	LMC
Algeria	1995	0.35	LMC
Morocco	1998	0.38	LMC
Jordan	2002	0.39	LMC
Tunisia	2000	0.40	LMC
Iran	1998	0.43	LMC
South Asia			
Expenditure			
Pakistan	2001	0.27	LIC
Bangladesh	2000	0.31	LIC
India	1999/2000	0.33	LIC
Nepal	1996	0.36	LIC
Sri Lanka	2002	0.38	LMC
East Asia and Pacific			
Expenditure			
Mongolia	1998	0.30	LIC
Indonesia	2000	0.34	LMC
Lao PDR	1997/1998	0.35	LIC
Vietnam	2002	0.35	LIC
Cambodia	1997	0.40	LIC
Thailand	2002	0.40	LMC
China	2001	0.45	LMC
Philippines	2000	0.46	LMC
Income			
Malaysia	1997	0.49	UMC
Europe and Central Asia			
Expenditure			
Hungary	2002	0.24	UMC
Bosnia & Herzegovina	2001	0.25	LMC
Armenia	2003	0.26	LMC
Uzbekistan	2000	0.27	LIC
Bulgaria	2003	0.28	LMC
Romania	2002	0.28	LMC
Serbia & Montenegro	2003	0.28	LMC
Slovenia	1998	0.28	HIC
Croatia	2001	0.29	UMC
Kyrgyzstan	2002	0.29	LIC
Lithuania	2000	0.29	UMC
Belarus	2000	0.30	LMC
Kazakhstan	2003	0.30	LMC
Albania	2002	0.31	LMC
Poland	2002	0.31	UMC
Estonia	1998	0.32	UMC
Russian Federation	2002	0.32	UMC
Tajikistan	2003	0.32	LIC
Latvia	1998	0.34	UMC
Azerbaijan	2001	0.36	LMC
Macedonia	2003	0.36	LMC
Moldova	2001	0.36	LIC
Turkey	2002	0.37	UMC
Georgia	2002	0.38	LMC
Turkmenistan	1998	0.41	LMC
Income			
Czech Republic	1996	0.25	UMC
Slovak Republic	1996	0.26	UMC
Ukraine	1999	0.29	LMC
Latin America and the Caribbean			
Expenditure			
Trinidad & Tobago	1992	0.39	UMC
Nicaragua	2001	0.40	LIC
Jamaica	2001	0.42	LMC
St. Lucia	1995	0.44	UMC
Peru	2000	0.48	LMC
Panama	2000	0.55	UMC
Income			
Venezuela	2000	0.42	UMC
Uruguay (urban)	2000	0.43	UMC
Guyana	1998	0.45	LMC
Costa Rica	2000	0.46	UMC
Dominican Republic	1997	0.47	LMC
Mexico	2002	0.49	UMC
El Salvador	2002	0.50	LMC
Argentina (urban)	2001	0.51	UMC
Chile	2000	0.51	UMC
Honduras	1999	0.52	LMC
Colombia	1999	0.54	LMC
Ecuador	1998	0.54	LMC
Paraguay	2001	0.55	LMC
Bolivia	2002	0.58	LMC
Guatemala	2000	0.58	LMC
Brazil	2001	0.59	LMC
Haiti	2001	0.68	LIC

Notes: Economies are classified by the World Bank according to 2004 per capita gross national income in the following income groups: low-income economies (LIC), $825 or less; lower-middle-income economies (LMC), $826–$3,255; upper-middle income economies (UMC), $3,256–$10,065; and high-income economies (HIC), $10,066 or more.
Source: World Bank (2005, Table A2, pp. 280–1).

Source: Brandolini and Smeeding (2007)

Table B-2. Selected measures of household income dispersion in USA, 1986-2005

Table A-3.
Selected Measures of Household Income Dispersion: 1967 to 2005
(Income in 2005 CPI-U-RS adjusted dollars. For further explanation of income inequality measures, see Current Population Reports, Series P60-204, "The Changing Shape of the Nation's Income Distribution: 1947–1998")

Measures of income dispersion	2005	2004[1]	2003	2002	2001	2000[2]	1999[3]	1998	1997	1996	1995[4]	1994[5]	1993[6]	1992[7]	1991	1990	1989	1988	1987[8]	1986
Household Income at Selected Percentiles																				
10th percentile upper limit	11,288	11,271	11,181	11,528	11,784	11,995	12,119	11,602	11,177	11,038	11,036	10,460	10,225	10,227	10,374	10,602	10,946	10,408	10,250	10,165
20th percentile upper limit	19,178	19,104	19,085	19,448	19,817	20,314	20,073	19,275	18,678	18,294	18,317	17,493	17,251	17,181	17,599	18,104	18,390	18,047	17,748	17,413
50th (median)	46,326	45,817	45,970	46,036	46,569	47,599	47,671	46,508	44,883	43,967	43,346	42,038	41,562	41,774	42,108	43,966	43,946	43,168	42,827	42,909
80th percentile upper limit	91,705	90,945	92,185	91,202	92,083	92,688	92,813	89,703	86,721	84,256	82,840	81,878	80,221	79,095	79,334	79,953	81,656	80,221	79,477	78,139
90th percentile lower limit	126,090	124,908	125,436	123,872	125,308	126,960	126,252	121,159	118,453	114,030	111,556	110,597	108,746	105,743	106,065	107,319	109,393	106,236	104,852	102,555
95th percentile lower limit	166,000	162,408	163,555	162,831	165,969	164,617	166,340	158,116	153,490	148,084	143,740	143,089	139,209	135,019	134,742	137,223	139,489	135,792	132,993	131,030
Household Income Ratios of Selected Percentiles																				
90th/10th	11.17	11.08	11.22	10.75	10.63	10.58	10.42	10.44	10.60	10.33	10.11	10.57	10.64	10.34	10.22	10.12	9.99	10.21	10.23	10.09
95th/20th	8.66	8.50	8.57	8.37	8.38	8.10	8.29	8.20	8.22	8.09	7.85	8.18	8.07	7.86	7.66	7.58	7.59	7.52	7.49	7.52
95th/50th	3.61	3.57	3.57	3.54	3.57	3.46	3.52	3.41	3.43	3.40	3.32	3.41	3.37	3.27	3.21	3.17	3.17	3.16	3.11	3.10
80th/50th	1.99	2.00	2.01	1.99	1.98	1.95	1.96	1.93	1.94	1.93	1.92	1.95	1.94	1.91	1.89	1.85	1.86	1.86	1.86	1.85
80th/20th	4.78	4.76	4.83	4.69	4.65	4.56	4.62	4.65	4.64	4.61	4.52	4.68	4.65	4.60	4.51	4.42	4.44	4.45	4.48	4.49
20th/50th	0.42	0.42	0.42	0.42	0.43	0.43	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.41
Mean Household Income of Quintiles																				
Lowest quintile	10,655	10,587	10,608	10,845	11,178	11,514	11,614	11,031	10,721	10,648	10,616	10,050	9,790	9,894	10,101	10,378	10,633	10,250	10,077	9,813
Second quintile	27,357	27,089	27,250	27,572	28,086	28,748	28,518	27,854	26,802	26,135	25,946	25,047	24,819	24,791	25,369	26,112	26,455	25,873	25,611	25,240
Third quintile	46,301	45,896	46,256	46,462	47,011	47,874	47,735	46,607	45,091	43,959	43,384	42,196	41,603	41,766	42,139	43,131	43,976	43,273	42,818	42,236
Fourth quintile	72,825	72,368	73,218	73,085	73,709	74,423	74,293	72,081	69,840	68,096	66,691	65,661	64,654	64,115	64,236	65,030	66,518	65,413	64,721	63,629
Highest quintile	159,583	156,502	156,082	156,038	160,975	161,272	158,432	152,531	148,898	143,096	139,175	138,039	134,704	124,233	123,179	126,199	130,031	124,881	123,082	120,434
Shares of Household Income of Quintiles																				
Lowest quintile	3.4	3.4	3.4	3.5	3.5	3.6	3.6	3.6	3.6	3.6	3.7	3.6	3.6	3.8	3.8	3.8	3.8	3.8	3.8	3.8
Second quintile	8.6	8.7	8.7	8.8	8.7	8.9	8.9	9.0	8.9	9.0	9.1	8.9	9.0	9.4	9.6	9.6	9.5	9.6	9.6	9.7
Third quintile	14.6	14.7	14.8	14.8	14.6	14.8	14.9	15.0	15.0	15.1	15.2	15.0	15.1	15.8	15.9	15.9	15.8	16.0	16.1	16.2
Fourth quintile	23.0	23.2	23.4	23.3	23.0	23.0	23.2	23.2	23.2	23.3	23.3	23.4	23.5	24.2	24.2	24.0	24.0	24.2	24.3	24.3
Highest quintile	50.4	50.1	49.8	49.7	50.1	49.8	49.4	49.2	49.4	49.0	48.7	49.1	48.9	46.9	46.5	46.6	46.8	46.3	46.2	46.1
Summary Measures																				
Gini index of income inequality	0.469	0.466	0.464	0.462	0.466	0.462	0.458	0.456	0.459	0.455	0.450	0.456	0.454	0.433	0.428	0.428	0.431	0.426	0.426	0.425
Mean logarithmic deviation of income	0.545	0.543	0.530	0.514	0.515	0.490	0.476	0.488	0.484	0.464	0.452	0.471	0.467	0.416	0.411	0.402	0.406	0.401	0.414	0.416
Theil	0.411	0.406	0.397	0.398	0.413	0.404	0.386	0.389	0.396	0.389	0.378	0.387	0.385	0.323	0.313	0.317	0.324	0.314	0.311	0.310
Atkinson:																				
e=0.25	0.098	0.097	0.095	0.095	0.098	0.096	0.092	0.093	0.094	0.093	0.090	0.092	0.092	0.080	0.078	0.078	0.080	0.078	0.077	0.077
e=0.50	0.192	0.190	0.187	0.186	0.189	0.185	0.180	0.181	0.183	0.179	0.175	0.180	0.178	0.160	0.156	0.156	0.158	0.155	0.155	0.155
e=0.75	0.289	0.286	0.283	0.279	0.282	0.275	0.268	0.271	0.272	0.266	0.261	0.268	0.266	0.242	0.237	0.236	0.239	0.236	0.238	0.237

See footnotes at end of table.

Source: Income, poverty and health insurance coverage in the US: 2005 (US Census Bureau)

Table B-2. Selected measures of household income dispersion in USA, 1986-2005 (cont.)

Table A-3.
Selected Measures of Household Income Dispersion: 1967 to 2005—Con.
(Income in 2005 CPI-U-RS adjusted dollars. For further explanation of income inequality measures, see Current Population Reports, Series P60-204, "The Changing Shape of the Nation's Income Distribution: 1947–1998")

Measures of income dispersion	2005	2004[1]	2003	2002	2001	2000[2]	1999[3]	1998	1997	1996	1995[4]	1994[5]	1993[6]	1992[7]	1991	1990	1989	1988	1987[8]	1986
Standard Errors of Household Income at Selected Percentiles																				
10th percentile upper limit	77	77	77	77	81	81	81	80	84	78	79	73	73	73	75	81	81	81	80	81
20th percentile upper limit	107	107	106	111	110	116	111	117	110	111	103	101	103	103	107	111	114	113	114	115
50th (median)	155	203	200	151	142	150	223	275	207	222	251	192	194	198	203	222	242	242	204	219
80th percentile upper limit	322	322	339	249	267	272	290	280	384	293	311	267	301	261	288	308	253	282	272	304
90th percentile lower limit	537	508	537	488	475	550	530	459	490	528	483	489	380	349	381	411	660	432	380	468
95th percentile lower limit	1,117	947	756	774	833	1,055	926	917	802	729	854	811	692	683	689	775	744	843	620	547
Standard Errors of Household Income Ratios of Selected Percentiles																				
90th/10th	0.090	0.088	0.091	0.083	0.083	0.085	0.083	0.082	0.091	0.087	0.084	0.087	0.085	0.081	0.082	0.087	0.095	0.089	0.088	0.093
95th/20th	0.076	0.688	0.062	0.062	0.063	0.070	0.065	0.069	0.065	0.063	0.064	0.066	0.063	0.062	0.061	0.063	0.062	0.066	0.060	0.059
95th/50th	0.028	0.025	0.021	0.022	0.023	0.026	0.024	0.024	0.022	0.022	0.023	0.024	0.022	0.021	0.021	0.022	0.021	0.023	0.020	0.018
80th/50th	0.010	0.011	0.011	0.009	0.010	0.009	0.010	0.010	0.011	0.011	0.010	0.010	0.011	0.010	0.011	0.010	0.009	0.010	0.010	0.011
80th/20th	0.031	0.316	0.032	0.030	0.029	0.029	0.029	0.032	0.034	0.032	0.031	0.031	0.033	0.032	0.032	0.032	0.031	0.032	0.033	0.034
20th/50th	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
Standard Errors of Mean Household Income of Quintiles																				
Lowest quintile	39	39	39	39	40	40	40	40	38	36	37	36	36	36	36	37	38	37	37	38
Second quintile	35	34	35	35	36	36	36	37	36	35	35	34	35	35	35	36	37	36	37	36
Third quintile	43	44	44	45	45	45	46	46	44	44	42	42	41	41	41	41	43	42	43	43
Fourth quintile	69	68	70	68	69	69	70	68	66	63	64	65	63	60	60	61	62	61	60	59
Highest quintile	856	846	802	843	950	941	828	863	887	863	812	815	815	452	430	475	525	476	467	441
Standard Errors of Shares of Household Income of Quintiles																				
Lowest quintile	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Second quintile	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Third quintile	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.11	0.11	0.11	0.11	0.11	0.11	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Fourth quintile	0.15	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.17	0.17	0.17	0.17	0.17	0.18	0.18	0.18	0.18	0.18	0.19	0.19
Highest quintile	0.34	0.34	0.34	0.34	0.35	0.34	0.35	0.35	0.35	0.35	0.35	0.36	0.36	0.35	0.34	0.35	0.35	0.35	0.35	0.35
Standard Errors of Summary Measures																				
Gini index of income inequality	0.0028	0.0029	0.0028	0.0029	0.0030	0.0030	0.0041	0.0042	0.0043	0.0043	0.0043	0.0042	0.0042	0.0038	0.0038	0.0039	0.0040	0.0041	0.0038	0.0038
Mean logarithmic deviation of income	0.0063	0.0063	0.0054	0.0052	0.0051	0.0049	0.0058	0.0069	0.0067	0.0064	0.0063	0.0061	0.0061	0.0055	0.0056	0.0053	0.0053	0.0055	0.0055	0.0057
Theil	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Atkinson:																				
e=0.25	0.0013	0.0013	0.0012	0.0012	0.0014	0.0013	0.0013	0.0015	0.0016	0.0016	0.0015	0.0015	0.0015	0.0007	0.0007	0.0007	0.0008	0.0008	0.0007	0.0007
e=0.50	0.0020	0.0020	0.0018	0.0020	0.0022	0.0021	0.0021	0.0023	0.0025	0.0024	0.0024	0.0023	0.0024	0.0013	0.0012	0.0013	0.0014	0.0014	0.0013	0.0012
e=0.75	0.0026	0.0026	0.0024	0.0025	0.0027	0.0026	0.0027	0.0029	0.0030	0.0030	0.0029	0.0028	0.0029	0.0019	0.0018	0.0018	0.0019	0.0020	0.0018	0.0018

See footnotes at end of table.

Source: Income, poverty and health insurance coverage in the US: 2005 (US Census Bureau)

Table B-3. Trends in four income inequality indicators for the entire population

	Levels most recent year				Percentpoint change											
					Gini			P90/P10 decile ratio			SCV			MLD		
	Gini	P90/P10	SCV	MLD	Mid-70s to Mid-80s	Mid-80s to Mid-90s	Mid-90s to 2000	Mid-70s to Mid-80s	Mid-80s to Mid-90s	Mid-90s to 2000	Mid-70s to Mid-80s	Mid-80s to Mid-90s	Mid-90s to 2000	Mid-70s to Mid-80s	Mid-80s to Mid-90s	
Australia	30.5	4.1	33.7	17.4	..	-0.7	0.0	..	-0.4	0.2	..	1.2	-3.4	..	0.5	
Austria	25.2	3.3	22.5	5.6	..	0.2	1.4	..	0.1	0.3	..	1.4	1.2	..	-0.2	
Belgium*	27.2	3.2	41.6	14.0	..	1.2	..	..	-0.0	..	..	9.1	..	..	0.4	
Canada	30.1	3.8	55.9	16.2	-0.8	-0.4	**1.8**	-0.6	-0.2	**0.2**	4.0	0.7	**22.6**	-2.5	-1.0	
Czech Republic	26.0	3.0	36.0	11.2	..	**2.6**	**0.2**	..	**0.3**	**0.1**	..	**5.3**	**0.2**	..	**1.9**	
Denmark	22.5	2.7	38.2	9.2	..	*-1.6*	**1.2**	..	*-0.2*	**0.1**	..	*-6.1*	**9.6**	..	*-1.6*	
Finland	26.1	3.1	72.1	11.8	*-2.8*	**2.1**	**3.3**	*-0.5*	**0.1**	**0.3**	*-3.7*	**7.8**	**47.9**	*-3.0*	**1.2**	
France	27.3	3.4	31.3	12.8	..	0.3	*-0.5*	..	0.1	*-0.0*	..	6.9	*-9.1*	..	-0.8	
Germany	27.7	3.5	32.0	14.1	..	..	*-0.6*	..	..	*-0.0*	..	..	*-1.4*	..	..	
Germany old Länder	27.5	3.5	31.5	14.4	..	1.4	-0.2	..	0.2	0.1	..	-0.2	-0.1	..	2.4	
Greece	34.5	4.8	64.8	20.9	*-7.7*	0.0	**0.9**	*-2.1*	-0.2	**0.1**	*-47.9*	1.1	**8.2**	*-11.5*	-0.3	
Hungary	29.3	3.6	35.6	14.7	..	**2.1**	0.1	..	**0.3**	0.1	..	**12.1**	-10.8	..	**1.7**	
Ireland	30.4	4.4	36.0	16.0	..	-0.6	-2.1	..	-0.1	0.3	..	32.0	-60.0	..	-3.0	
Italy	34.7	4.6	66.8	24.3	..	**4.2**	*-0.1*	..	**0.9**	*-0.2*	..	**29.6**	*-3.1*	..	**7.6**	
Japan	31.4	4.9	33.6	19.6	..	**1.7**	**1.9**	..	**0.5**	**0.5**	..	**2.6**	**4.3**	..	**2.5**	
Luxembourg	26.1	3.2	30.7	11.2	..	**1.2**	0.2	..	**0.2**	-0.0	..	**2.6**	3.4	..	**1.0**	
Mexico	46.7	9.3	142.3	41.2	..	**6.9**	*-4.1*	..	**2.2**	*-1.6*	..	**154.6**	*-121.2*	..	**11.7**	
Netherlands	25.1	3.0	30.8	11.7	**0.7**	**2.1**	-0.4	**0.1**	**0.4**	-0.1	**2.7**	**2.5**	5.8	**0.6**	**2.3**	
New Zealand	33.7	4.4	..	..	..	**6.1**	**0.6**	..	**0.6**	**0.4**	..	..	..	..	..	
Norway	26.1	2.8	31.6	13.5	..	**2.2**	0.5	..	**0.1**	-0.2	..	**2.3**	1.1	..	**3.1**	
Poland	36.7	4.2	118.3	23.7	..	..	*-2.1*	..	..	*-0.1*	..	..	*-93.5*	..	..	
Portugal	35.6	5.0	59.2	21.4	..	**3.0**	*-0.3*	..	**0.4**	*-0.1*	..	**14.5**	*-3.1*	..	**3.6**	
Spain*	30.3	4.1	36.9	20.4	..	*-2.5*	..	..	*-0.8*	..	..	*-41.7*	..	..	*-5.6*	
Sweden	24.3	2.8	45.4	10.6	*-1.6*	1.4	**3.1**	*-0.2*	0.1	**0.3**	*-2.1*	8.0	**25.1**	*-1.8*	2.0	
Switzerland	26.7	3.2	39.9	13.6	..	..	..	..	..	..	..	..	..	..	..	
Turkey	43.9	6.5	145.2	33.6	..	**5.6**	*-5.2*	..	**0.3**	*-0.3*	..	..	..	..	..	
United Kingdom	32.6	4.2	60.4	18.8	**3.8**	**2.5**	**1.4**	**0.5**	**0.5**	**0.1**	**10.3**	**8.6**	**17.7**	**3.1**	**3.0**	
United States	35.7	5.4	75.5	24.8	**2.1**	2.4	-0.5	**0.7**	-0.0	-0.1	**4.1**	30.5	2.8	**2.3**	2.5	
OECD 25	30.8	4.2	51.9	16.7			-0.1			0.0			-6.8			
OECD 20	30.8	4.3	50.2	16.7		1.8	0.2		0.3	0.1		15.9	-2.6		1.8	
OECD 18	29.1	3.9	44.8	15.2		1.4	0.7		0.2	0.2		7.7	4.3		1.2	

Notes: Most recent year refers to year around 2000, except for Belgium and Spain (1995). For Czech Republic, Hungary and Portugal, the period labelled "Mid-80s to mid-90s" refers to that from "early to mid-90s". OECD25 average includes all countries for which data are available for mid-90s and 2000. OECD20 average includes all countries for which data were available for mid-80s, mid-90s and 2000 and excludes Belgium, the Czech Republic, Hungary, Poland, Portugal, Spain and Switzerland. OECD18 average excludes, in addition, Mexico and Turkey. OECD25 uses data for reunified Germany, OECD20 and OECD18 use data for old Länder only.

Source: OECD (Förster and d'Ercole, 2005)

Table B-4. Trends in real household equivalent income at different quintiles

	Average annual change mid-1980s to mid-1990s				*Average annual change mid-1990s to 2000*			
	Bottom 2 deciles	*Middle 6 deciles*	*Top 2 deciles*	*Average*	*Bottom 2 deciles*	*Middle 6 deciles*	*Top 2 deciles*	*Average*
Australia	0.1	-0.3	-0.4	-0.3	1.8	2.5	2.2	2.3
Belgium	1.1	0.5	1.0	0.7	..	..	..	..
Canada	0.3	-0.2	-0.1	-0.1	0.8	1.6	2.7	2.0
Czech Republic	..	..	..	..	0.4	0.6	0.7	0.6
Denmark	1.0	0.7	0.4	0.7	0.6	1.0	1.6	1.1
Finland	0.8	0.8	1.6	1.1	2.3	3.6	5.4	4.0
France	1.2	0.8	1.1	0.9	0.0	0.1	-0.2	0.0
Germany	0.6	1.3	1.4	1.3	0.4	0.7	0.6	0.6
Greece	0.3	0.1	0.1	0.1	3.0	2.9	3.8	3.3
Hungary	..	..	..	..	1.8	2.4	2.1	2.2
Ireland	3.1	2.5	2.4	2.5	5.2	7.7	5.4	6.6
Italy	-1.5	0.3	1.0	0.5	2.8	1.8	2.2	2.0
Japan	0.7	1.6	1.8	1.6	-1.9	-0.8	0.0	-0.7
Luxembourg	1.9	2.0	2.3	2.1	2.5	2.4	2.7	2.5
Mexico	0.6	1.0	2.8	2.1	1.1	0.3	-1.5	-0.7
Netherlands	0.5	1.5	1.7	1.5	2.6	2.3	2.1	2.3
New Zealand	-1.2	-0.6	1.3	0.2	1.3	2.3	2.3	2.3
Norway	-0.4	0.3	0.9	0.5	6.6	5.2	6.3	5.7
Poland	..	..	..	..	2.3	2.4	0.7	1.6
Portugal	..	..	..	..	5.0	4.1	4.4	4.3
Spain	3.1	2.4	1.9	2.3	..	..	..	..
Sweden	0.4	0.7	0.9	0.8	1.3	2.7	4.5	3.2
Switzerland	..	..	..	..	6.0	1.8	0.4	1.6
Turkey	-1.0	-1.0	1.7	0.5	0.2	0.4	-2.2	-1.0
United Kingdom	0.8	1.5	1.9	1.6	2.3	2.6	3.6	3.0
United States	1.1	0.9	1.6	1.2	0.7	0.9	0.5	0.7
OECD-20	*0.6*	*0.8*	*1.3*	*1.0*	*1.6*	*2.0*	*2.1*	*1.9*

Note: Survey data on household income have been deflated by the change in the consumer price index in each country. Data for Germany refer to old Länder. Exact years are specified in the note to Table 1.

Source: OECD (Förster and d'Ercole, 2005)

Table B-5. Gini indices of market income and disposable income in 16 countries (per cent)

Country	Year	Gini index for market income [1]	Gini index for disposable income [2]	Absolute reduction [3] = [1]–[2]	Percentage reduction [4] = [3]/[1]
High-income economies					
Denmark	2000	42	23	20	47
Finland	2000	38	25	14	36
Netherlands	1999	39	25	14	36
Norway	2000	41	25	16	39
Sweden	2000	46	25	21	45
Germany	2000	48	28	21	43
Switzerland	2000	36	28	8	22
Taiwan	2000	33	30	3	9
Canada	2000	42	30	12	28
Australia	2001	48	32	17	34
United Kingdom	1999	51	34	17	33
Israel	2001	52	35	17	33
United States	2000	48	37	11	23
Middle-income economies					
Czech Republic	1996	44	26	18	41
Romania	1997	38	28	10	27
Poland	1999	50	29	21	41

Notes: Observations for disposable income are bottom-coded at 1% of the mean of equivalent disposable income and top-coded at ten times the median of unadjusted disposable income. Changes in disposable incomes due to bottom- and top-coding are entirely attributed to market incomes. Both market and disposable incomes are adjusted for household size by the square-root equivalence scale.

Source: Brandolini and Smeeding (2007)

Table B-6. Distribution of market income components and disposable income; age 18-65

	Earnings			Self-employment income			Capital income			Disposable income		
	bottom quintile	six middle deciles	top quintile	bottom quintile	six middle deciles	top quintile	bottom quintile	six middle deciles	top quintile	bottom quintile	six middle deciles	top quintile
Australia, 1999	**1.6**	**54.3**	**44.0**	**6.4**	**54.2**	**39.4**	**9.2**	**53.6**	**37.2**	**7.6**	**55.6**	**36.8**
change, 1984-1994	-1.3	16.0	-14.7	-2.3	9.1	-6.8	-1.0	-4.0	5.0	0.2	0.7	-0.9
change, 1994-1999	-0.1	-18.3	18.4	0.5	2.6	-3.1	1.2	6.0	-7.3	0.0	-0.1	0.1
Belgium, 1995	**3.3**	**57.7**	**39.1**	**4.7**	**29.4**	**65.9**	**3.0**	**24.1**	**72.9**	**8.7**	**54.8**	**36.4**
Canada, 2000	**4.3**	**55.1**	**40.6**	**8.6**	**35.7**	**55.6**	**6.5**	**49.1**	**44.4**	**7.5**	**54.5**	**38.0**
change, 1985-1995	0.9	-2.1	1.2	2.4	13.8	-16.2	1.1	10.4	-11.5	2.4	-0.8	-1.6
change, 1995-2000	-0.3	-1.3	1.6	2.4	-2.1	-0.3	0.0	3.7	-3.7	-0.5	-0.8	1.4
Czech Republic, 2002	5.9	55.3	38.8	4.4	35.4	60.2	13.7	31.4	54.9	9.8	54.1	36.1
change, 1996-2002	-0.2	-2.1	2.2	-0.1	4.8	-4.7	6.7	3.1	-9.8	-0.4	-0.3	0.7
Denmark, 2000	**4.6**	**58.0**	**37.5**	**5.0**	**39.6**	**55.4**	**6.0**	**39.1**	**54.8**	**10.2**	**57.2**	**32.7**
change, 1983-1994	-1.2	-1.0	2.2	-8.3	-6.4	14.7	-1.5	2.2	-0.7	0.1	0.6	-0.7
change, 1994-2000	0.2	0.0	-0.2	-0.6	-0.7	1.3	-5.4	-6.7	12.1	-0.4	-0.6	0.9
Finland, 2000	**3.8**	**56.7**	**39.6**	**6.0**	**43.2**	**50.8**	**10.5**	**46.0**	**43.5**	**9.2**	**55.6**	**35.2**
change, 1986-1995	-2.5	-2.3	4.8	-4.5	-5.6	10.0	-5.2	0.7	4.5	-0.6	-1.7	2.3
change, 1995-2000	0.5	1.4	-1.9	-1.6	-1.7	3.3	-1.2	-7.8	9.0	-0.8	-0.9	1.6
France, 2000	**5.5**	**54.6**	**39.9**	**7.0**	**32.4**	**60.6**	**8.5**	**40.2**	**51.3**	**9.1**	**54.2**	**36.7**
change, 1984-1994	-0.4	-0.5	0.9	-3.9	-4.7	8.7	-1.1	-4.5	5.6	0.0	-1.0	1.0
change, 1994-2000	0.1	0.0	0.0	-0.8	2.4	-1.6	0.6	2.9	-3.4	0.0	0.3	-0.3
Germany (old Länder), 2001	**5.7**	**59.4**	**34.9**	**1.5**	**25.5**	**73.0**	**7.7**	**36.3**	**56.0**	**8.5**	**55.7**	**35.8**
change, 1984-1994	-0.8	-0.7	1.5	0.8	0.6	-1.4	-0.4	3.9	-3.4	-0.9	0.3	0.6
change, 1994-2001	-0.4	0.8	-0.4	-1.5	-5.8	7.3	-2.6	3.2	-0.6	-0.1	-0.1	0.2
Germany, 2001	**4.9**	**58.5**	**36.6**	**1.5**	**27.2**	**71.3**	**8.3**	**34.8**	**56.9**	**8.4**	**55.4**	**36.1**
change, 1994-2001	-0.6	0.3	0.3	-1.4	-0.6	1.9	-1.4	3.5	-2.0	-0.1	0.3	-0.2
Ireland, 2000	**3.1**	**57.4**	**39.5**	**6.3**	**45.1**	**48.5**	**6.9**	**48.1**	**45.0**	**7.5**	**56.2**	**36.2**
change, 1987-1994	0.0	0.3	-0.3	1.0	3.2	-4.2	0.5	0.1	-0.6	0.7	0.5	-1.2
change, 1994-2000	1.3	3.8	-5.1	1.0	7.5	-8.5	0.5	2.1	-2.6	-0.2	3.5	-3.2
Italy, 2000	**5.9**	**61.5**	**32.6**	**3.1**	**27.6**	**69.3**	**1.8**	**23.4**	**74.8**	**6.5**	**52.5**	**41.0**
change, 1984-1995	-1.8	-0.3	2.1	-0.4	-6.1	6.6	-2.0	-5.7	7.7	-1.6	-1.2	2.8
change, 1995-2000	0.8	2.3	-3.1	-1.0	-1.4	2.4	-0.2	-12.6	12.8	0.2	0.0	-0.1
Japan, 2000	**5.0**	**55.5**	**39.6**	**14.3**	**51.7**	**34.0**	**12.3**	**41.3**	**46.4**	**6.7**	**55.7**	**37.5**
change, 1985-1994	-0.8	-0.5	1.3	-3.7	1.6	2.1	0.5	5.7	-6.2	-0.7	0.3	0.5
change, 1994-2000	-0.1	-0.7	0.9	-1.8	0.9	0.9	-3.6	2.3	1.3	-0.7	-0.6	1.3
Netherlands, 2000	**5.3**	**57.9**	**36.8**	**4.9**	**37.2**	**57.9**	**4.7**	**58.3**	**37.0**	**9.2**	**56.6**	**34.2**
change, 1985-1995	-1.7	0.2	1.5	0.6	2.5	-3.0	0.0	7.5	-7.5	-1.3	0.4	0.9
change, 1995-2000	1.1	0.1	-1.2	-0.1	-0.1	0.2	-0.3	-5.8	6.1	0.2	0.1	-0.2
New Zealand, 2001	**3.2**	**54.3**	**42.5**	**5.2**	**42.1**	**52.7**	**4.7**	**35.9**	**59.4**	**7.2**	**52.6**	**40.2**
change, 1986-1996	-2.2	-1.5	3.6	-2.4	-12.2	14.6	1.0	-0.5	-0.5	-1.4	-3.2	4.6
change, 1996-2001	0.0	-1.2	1.2	0.8	10.7	-11.5	-1.6	-8.1	9.7	-0.4	-0.1	0.4
Norway, 2000	**5.7**	**58.8**	**35.5**	**5.7**	**40.3**	**54.0**	**5.2**	**27.4**	**67.4**	**9.4**	**55.0**	**35.6**
change, 1986-1995	-2.6	0.0	2.6	-1.4	-3.1	4.5	-3.7	-16.9	20.5	-1.2	-0.5	1.6
change, 1995-2000	0.4	-2.3	1.9	2.3	6.5	-8.9	-1.0	-6.6	7.6	0.2	-1.6	1.4
Portugal, 2000	**4.9**	**48.3**	**46.9**	**11.1**	**49.4**	**39.5**	**4.2**	**35.7**	**60.1**	**7.2**	**50.0**	**42.8**
change, 1990-1995	-1.6	-3.4	5.0	-1.9	-5.7	7.7	-8.9	-8.5	17.4	-3.1	-2.6	5.7
change, 1995-2000	0.5	-1.5	1.0	0.9	-1.2	0.3	-0.4	-3.0	3.4	0.1	-1.1	1.0
Sweden, 2000	**5.0**	**56.0**	**39.1**	**12.8**	**52.4**	**34.8**	**4.2**	**34.7**	**61.1**	**9.8**	**56.2**	**34.1**
change, 1983-1995	-0.3	-1.4	1.6	-5.3	-2.8	8.1	1.4	-0.4	-1.1	1.2	-1.6	0.4
change, 1995-2000	-0.3	-0.6	0.9	-6.8	-1.7	8.6	-0.6	-4.1	4.7	-0.8	-1.1	1.9
Switzerland, 2001	**6.8**	**55.8**	**37.4**	**19.5**	**46.9**	**33.6**	**17.4**	**48.4**	**34.2**	**9.1**	**55.5**	**35.4**
United Kingdom, 2000	**3.0**	**54.3**	**42.6**	**4.2**	**32.8**	**63.0**	**5.8**	**51.3**	**42.8**	**7.7**	**52.9**	**39.4**
change, 1985-1995	-0.3	-2.9	3.2	-1.9	0.4	1.4	-1.8	0.7	1.2	-0.8	-1.2	2.0
change, 1995-2000	0.1	0.0	-0.1	-1.5	-8.2	9.7	0.6	1.8	-2.4	-0.3	-0.9	1.1
United States, 2000	**4.1**	**51.1**	**44.8**	**4.5**	**44.1**	**51.4**	**3.8**	**38.6**	**57.5**	**6.2**	**53.0**	**40.8**
change, 1984-1995	-0.2	-3.9	4.1	-0.5	-2.0	2.4	-1.0	-3.0	4.0	-0.2	-2.2	2.4
change, 1995-2000	0.3	-0.1	-0.2	-1.3	2.2	-0.9	0.5	1.3	-1.9	0.0	0.4	-0.5
Average (17) 2000	**4.5**	**55.8**	**39.7**	**6.5**	**40.5**	**52.9**	**6.8**	**40.6**	**52.6**	**8.2**	**54.6**	**37.2**
change 85-95	-1.1	-0.1	1.2	-2.0	-1.5	3.5	-2.0	-2.1	4.1	-0.6	-0.8	1.4
change 95-2000	0.2	-1.2	0.9	-0.5	0.9	-0.3	-0.4	-1.7	2.1	-0.2	-0.2	0.5

Source: OECD (Förster and d'Ercole, 2005)